

## IV. Support/Ancillary Facility Plan Development

The support/ancillary plan associated with the OMP is focused primarily on accommodating facilities previously identified for future development and replacement of facilities impacted by the airfield development proposed by the OMP. While estimated future facility requirements have been defined for support/ancillary facilities, the ultimate need and configuration for most of these facilities is dictated by airport tenant decisions on how to accommodate demand, and are not necessarily in the control of the Airport operator. As such, the facilities depicted on the draft ALP are those necessary to replace in-kind facilities impacted by OMP development. Space available to accommodate additional growth in support/ancillary facilities is also identified on the ALP, although specific facility configurations are not provided. The following sections discuss the future support/ancillary facility requirements and concepts:

- Support /Ancillary Facility Requirements
- Support/Ancillary Facility Concepts
- Selected Development Plan

Each of these sections is subdivided as necessary to address specific issues. Additionally, projections of cargo activity for use in estimating potential growth in cargo facility requirements are presented in Appendix A. In addition, Appendix B provides additional detail on the methodology used to estimate Support Facility Requirements.

### 4.1 Support/Ancillary Facility Requirements

Ancillary facilities needed to support the operation of the Airport include the following:

- Cargo facilities
- Airline/GSE maintenance facilities
- Flight kitchens
- Airport Maintenance/DOA
- GA/FBO facilities

Currently, these facilities encompass approximately 601 acres of Airport property. The identification of future requirements for these facilities ensures that the space available for support facility development on the proposed plan is sufficient to accommodate growth in these facilities, should it occur. A brief description for each category of ancillary facility follows:

- **Cargo Facilities** serve both the all-cargo (freight) activity and belly cargo that is transported on regularly scheduled passenger aircraft. The air cargo industry can be classified in two operating types: (1) freight/express cargo and (2) mail. For the purpose of this assessment, the cargo facility requirements at the Airport are based on the combined enplaned cargo tonnage demand levels of both freight/express cargo and mail. On that basis, on-Airport enplaned cargo tonnage defines the need for warehouse buildings and truck dock areas. The need for apron is associated with the total peak month enplaned on/off-Airport cargo tonnage, and the demand for auto parking facilities is correlated to the warehouse gross area. At

O'Hare, most cargo facilities are located within the southern airfield (i.e., south of Runway 9R-27L), with a few located immediately east of the terminal complex.

- **Airline Maintenance Facilities** are dedicated to the maintenance of air carrier aircraft. For the purpose of this assessment, annual aircraft operations form the basis for identifying future airline maintenance facilities. Typically, airline maintenance facilities serve the needs of aircraft storage and repair. They include hangar buildings, airside apron, and auto parking. Currently, these facilities are located in the Northwest Maintenance Area, north of Runway 9L-27R, between Runway 14L-32R and 14R-32L.
- **Ground Service Equipment (GSE) Maintenance** includes the facilities dedicated to the maintenance of ground power units, baggage carts, dollies, tow bars, tug and tractors, scissor lifts, and maintenance stands, among other GSE. These services typically include, but are not limited to, routine, preventive, or emergency maintenance. GSE maintenance facilities typically include hangar, apron, storage yard, and auto parking. At O'Hare, these facilities are currently primarily located in the Northwest Maintenance Area.
- **Flight Kitchens** provide catering services to the airlines. Generally, the primary structural components comprise buildings and truck dock areas. Currently, the flight kitchens are dispersed throughout the Airport, with facilities located in the East Services Area and Northwest Maintenance Area.
- **Airport Maintenance/DOA Facilities** include DOA's maintenance and administrative facilities. Typically, airport maintenance facilities require warehouse for storage, repair, or construction purposes. Administrative facilities primarily require offices to support DOA management activities and auto parking to accommodate DOA's employees and visitors.
- **General Aviation (GA)/Fixed Base Operators (FBO)** GA/FBOs provide passenger terminal facilities as well as fueling, aircraft parking, and, to varying degrees, aircraft maintenance. The Airport has one FBO, Signature Flight Support.

This assessment evaluates each ancillary facility to determine their adequacy for serving the existing demand and projected demand for 2007, 2009, 2013, and 2018.

#### **4.1.1 Methodology**

The methodology for assessing the facility requirements for each facility type varies. Typically, the methodology entails comparing the gross facility areas with an associated demand level and an assessment of the current utilization of space. Tenant surveys were conducted to identify the adequacy of the existing facilities to satisfy the current demand levels. For those who responded, the information pertaining to the current utilization of their facilities was incorporated into this analysis. Subsequent discussions with DOA staff also contributed to the assessment of the existing facilities. Through this process, planning ratios were identified for each facility component. To obtain the facility requirements, the recommended planning ratios for each component are applied to the projected demand levels corresponding to each planning level.

#### **4.1.2 Facility Requirements Summary**

The support/ancillary facility requirements increase from an estimated 601 existing acres to approximately 694 acres in 2018, representing a 15 percent increase in area. **Table IV-1** summarizes the facility requirement by each facility category. It also includes a summary of the existing



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**Table VI-1 Support /Ancillary Facility Requirements**

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facilities and the recommended facilities necessary to meet existing demand levels. As shown, only the cargo and the airport maintenance/DOA facilities require additional facilities by the end of the planning horizon. Based on existing and projected demand levels, future needs for GSE maintenance and flight kitchens can be accommodated within the existing facility space. The assessments of the airline maintenance and GA/FBO facilities also demonstrate that no additional facilities are projected throughout the planning levels.

The following sections provide relevant details on the establishment of the facility requirements contained in Table VI-1. Appendix B presents additional detail on the requirements definition.

**4.1.2.1 Cargo** - During a preliminary analysis of enplaned cargo tonnage, it was determined that approximately 87.9 percent of total cargo (belly cargo and all cargo) is processed on-Airport, while the remaining 12.1 percent is processed off-Airport. These percentages were estimated based on the 2001 Airport Activity Statistics (summarized by belly and all cargo operators) and information collected in the inventory process. It was assumed that any cargo tonnage recorded for carriers not known to have on-Airport facilities, was processed off-Airport. The estimated 12.1 percent of cargo processed off-Airport is assumed representative of the cargo operators who transfer cargo directly between the aircraft and surface transportation modes, thus not requiring warehousing on-Airport. This share of off-Airport cargo is assumed to remain constant over the planning periods. Therefore, the cargo facility requirements shown for 2007, 2009, 2013, and 2018 represent facility needs for on-Airport enplaned cargo only.

Existing cargo facilities comprise a total of approximately 263 acres. However, discussions with various cargo area tenants have identified surplus warehouse and apron that is currently not being effectively utilized. As shown in Table IV-1, the recommended facilities needed to satisfy the existing demand levels require a total area of approximately 213 acres considering this existing surplus. While certain cargo tenants may be experiencing facility constraints and others have facility surpluses, future facility requirements assume that more efficient utilization of cargo space will occur. As a consequence, the recommended cargo facilities to serve existing demand form the basis for establishing planning ratios utilized to determine future cargo facility requirements. As shown, a total of approximately 316 acres of cargo development is needed to accommodate 2018 requirements.

**4.2.1.2 Airline Maintenance** - Aircraft maintenance facility requirements at an airport are driven by airline decisions and not related directly to activity at the airport. The development of these facilities at an airport is strictly a policy decision made by the airlines themselves. Many airports, including some commercial service airports, do not have dedicated aircraft maintenance facilities on site. Some airports may have large maintenance facilities dedicated to passenger aircraft yet have little or no commercial service. Others (like O'Hare) have significant commercial service and a significant number of aircraft maintenance facilities. Since there is no direct relationship between airline maintenance facility requirements and activity at an airport, the assessment of long-term facility needs for airline maintenance facilities is purely speculative.

As shown in Table VI-1, the existing airline maintenance facilities encompass a total area of approximately 222 acres. During discussions with the airline tenants and DOA staff, surplus facilities were identified. In addition, DOA staff indicated that United Parcel Services (UPS) and Atlantic Coast Airlines have expressed their interest in developing aircraft maintenance facilities at the Airport. However, surplus facilities exceed the facility requirements identified by UPS and ACA.

Even considering UPS and ACA requirements, the recommended total area of airline maintenance facilities required to meet the existing demand levels is approximately 212 acres. As such, gross airline maintenance facility requirements for 2007, 2009, 2013, and 2018 are maintained at the existing requirement level, approximately 212 acres. It should be noted that although more hangar facilities are required, adequate space to accommodate these facilities is available within existing surplus areas dedicated to airline maintenance functions.

**4.1.2.3 Airline GSE Maintenance** - The components evaluated for the purpose of this assessment are similar to the components evaluated for the airline maintenance facilities. The evaluation of GSE Maintenance buildings and the airside apron are predicated on the annual air carrier operations. The assessment of auto parking areas correlates with the needs associated with the hangar facility. These needs were established according to the gross area of the hangar facility.

Currently, the airline GSE maintenance facility encompasses a total area of approximately 33 acres. During discussions with GSE tenants, surplus facilities, including hangar, apron, and auto parking, were identified. These surplus facilities comprise a total area of approximately 12 acres. As a result, the recommended GSE maintenance facilities necessary to serve the existing air carrier operation demand levels require an estimated total site of 21 acres. In 2018, 27 acres of total space dedicated to airline GSE maintenance facilities is needed. These needs can be accommodated by the existing designated GSE maintenance areas.

**4.1.2.4 Flight Kitchen** - The flight kitchen facilities at O'Hare were evaluated on an aggregate basis according to peak month departing passengers. The evaluation of truck loading dock areas and auto parking was performed analogous to the methodology used for the previous assessments.

As summarized in Table VI-1, the existing flight kitchen facilities encompass a total area of 16.8 acres. Based on discussions with the DOA, it was estimated that approximately 60 percent of the current flight kitchens at the Airport are surplus facilities. These surplus facilities total an estimated 8 acres of airport property. On that basis, the recommended total area required to accommodate the existing demand levels for flight kitchen facilities comprises approximately 8 acres. Future facility needs are estimated to require a total area of approximately 11 acres in 2018. Therefore, no additional facilities are anticipated throughout the planning periods.

**4.1.2.5 Airport Maintenance/DOA** - Based on comments by Airport personnel, the existing airport maintenance facilities are generally adequate to meet existing demands. However, it is anticipated that expansion of the airfield will require commensurate expansion of airport maintenance facilities in the future. Total airport maintenance/DOA facilities are assumed to increase moderately between years 2002 and 2018 with growth over 2002 of 25 percent in 2007, 50 percent in 2009, 75 percent in 2013, and 90 percent in 2018. This growth through 2018 is based on a 90 percent increase in pavement due to the OMP.

As shown in Table VI-1, the existing Airport maintenance/DOA facilities comprise a total site area of 61 acres. Facility requirements identified for 2018 encompass an estimated area of 115 acres.

**4.1.2.6 GA/FBO** - GA activities at the Airport are limited to only one FBO, Signature Flight Support (SFS). Considering the level of this activity, the SFS FBO facility is evaluated on an aggregate basis according to the level of peak month GA operations at the Airport.

SFS has recently initiated development of new FBO facilities at the Airport on the former military site. Development of these facilities was necessitated by the planned development of Terminal 6, which utilizes space occupied by the current FBO facilities. The planned FBO facilities will occupy a site of approximately 13.2 acres, providing apron, terminal building and parking facilities. Since GA activity is expected to remain constant throughout the planning period at levels slightly less than currently experienced, it is not anticipated that additional facilities beyond those currently planned for the new FBO facility will be needed during this timeframe.

## **4.2 Support/Ancillary Facility Concepts**

A number of existing support/ancillary facilities are impacted by the OMP airfield development. Major facilities impacted include two cargo facilities in the Southwest Cargo Area, two maintenance hangars, two flight kitchens, two GSE maintenance facilities in the Northwest Maintenance Area, and the new FBO facility in the former military area. Additionally, a number of smaller facilities are also impacted.

A review of the available areas to accommodate these impacted facilities was performed based on the proposed airfield layout released in the City's June 2001 proposal. **Exhibit VI-1** presents the areas on the Airport available development under the original proposal. As shown, the primary areas identified for potential support facility relocation include the Northwest Maintenance Area which can be expanded in both the east and west directions as the result of the closure of Runways 18-36, 14L-32R and 14R-32L; the former military site; the Southwest Cargo Area, which can be expanded to the west after relocation of the Union Pacific Railroad, and to the east after closure of Runway 14R-32L. Concepts for relocation of impacted facilities in these areas are presented in the following sections.

### **4.2.1 Northwest Maintenance Area and Former Military Area Concepts**

**Exhibit IV-2** depicts parcels available for development in the Northwest Maintenance Area and former military area. As shown, significant space is potentially available to accommodate the relocation of impacted facilities. This area would increase significantly upon closure of Runways 14L-32R and 14R-32L.

**Exhibits IV-3** through **IV-5** present various initial concepts developed for the Northwest Maintenance and military areas under various assumptions regarding available land and access. The following discuss these initial concepts:

- *Initial Concept 1* is depicted on Exhibit VI-3. As shown, this concept depicts total redevelopment of the Northwest Maintenance Area and assumes the availability of property currently occupied by Runway 14R-32L and water detention facilities northeast of this runway. As depicted, cargo facilities would line the south and southeast boundaries of the site with airline maintenance facilities along the north side of the site. Access would be from the east via Lee Street and west via either York Road or the Mount Prospect Road entrance.
- *Initial Concept 2*, depicted on Exhibit IV-4, presents a concept that maintains unimpacted facilities in their current location and avoids areas northeast of Runway 14L-32R identified for potential detention facilities. Facility development in this concept is proposed west of the connector taxiway between the Runway 9L and Runway 9C ends, in the area currently occupied by Runway 14L-32R, and on the former military site. Cross-airfield access is depicted running from the military site under Runway 4L-22R to the maintenance area and

west to York Road or the Mount Prospect Road entrance. The potential for development of facilities north of Runway 9L-27R is also depicted.

- *Initial Concept 3*, depicted on Exhibit IV-5, presents a concept similar to Initial Concept 2 with the exception that access to the military area is no longer depicted.

**Exhibits IV-6 through IV-8** present refined concepts for the Northwest Maintenance Area. Based on planning efforts for the Southwest Cargo Area, it was determined that the cargo facilities impacted in that area could be relocated within the Southwest Cargo Area. As such, it was decided that the relocation of impacted facilities in the Northwest Maintenance Area should focus on accommodating these relocations within the Northwest Maintenance Area. Exhibits IV-6 through IV-8 depict slightly differing concepts for accommodating these facilities. The following points are noteworthy about these concepts:

- Generally the concepts differ only in the locations proposed for the relocated facilities.
- All concepts assume that parking facilities associated with the various relocated facilities will remain within the Northwest Maintenance Area generally in proximity to the relocated facilities.
- Ground Access is provided from a realigned Mount Prospect Road entrance with a tunnel connection under the taxiway connecting Runways 9L and 9C.
- The potential site for Supplemental ATCT development is depicted. The need, requirements, and location of the ATCT will ultimately be determined by the FAA.

With the changes in airport security subsequent to the events of September 11, 2001, it became desirable to remove employee parking facilities from the Airport Operations Area. **Exhibits IV-9 through IV-11** present additional refined concepts for the Northwest Maintenance Area, with parking facilities moved outside of the secured area, near the Mount Prospect Road entrance.

**Exhibits IV-12 through IV-16** present refined concepts for facility development on the military site. The concepts depict various options for development of expansion cargo facilities and to accommodate the relocated GA facility. The following points are noteworthy:

- Ground Access for all of the concepts is provided off of relocated Bessie Coleman Drive. Large truck traffic associated with these facilities would impact the traffic on Bessie Coleman Drive, which is predominately auto traffic.
- The concepts vary primarily in the orientation of the cargo facilities, and location of the GA facility.
- The concepts demonstrate that the military site could provide additional development opportunities for cargo facilities.

#### **4.2.2 Southwest Cargo Area Concepts**

**Exhibits IV-17 through IV-19** present various initial concepts developed for the Southwest Cargo Area under various assumptions regarding available land and access. The following discuss these initial concepts:

- *Initial Concept 1* is presented in Exhibit VI-17. As shown, this concept depicts total redevelopment of the Southwest Cargo Area and assumes the availability of property

currently occupied by the Runway 32L RPZ, the southern portion of Lake O'Hare, and the area west of the Union Pacific Railroad. As depicted, cargo facilities would line the site from east to west, served by an access road running along the southern boundary of the site. This access road would connect to the relocated Irving Park Road on the west and extend beneath Runway 4R-22L to the Irving Park Road/Mannheim Road intersection on the east.

- *Initial Concept 2* and *Initial Concept 3*, presented in Exhibits IV-18 and IV-19, respectively, present similar concepts that maintain unimpacted cargo facilities in their current location and avoid the area occupied by Lake O'Hare. The majority of relocated facilities are developed on the west end of the site, west of the current location of the Union Pacific Railroad. Cross airfield access, as depicted in Concept 1, is maintained.

**Exhibits IV-20 through IV-22** present refined concepts for the Southwest Cargo Area. The refined concepts focused on accommodating the facilities displaced by Runway 10C-28C in a manner consistent with their existing size and layout. The following points are noteworthy about these concepts:

- Generally the concepts differ only in the locations proposed for the relocated facilities.
- Access for these concepts is provided via Irving Park Road on the west, passing beneath the taxiway connecting Runway 10C to Runway 10R.
- Airside service road access connecting the Postal Facility south of Runway 9R-27L to the cargo area is also provided, requiring a tunnel beneath Runway 10R-27L.
- The potential site for Supplemental ATCT development is depicted. The need, requirements, and location of the ATCT will ultimately be determined by the FAA.

Upon further analysis (presented in Section II of this document), it was determined that two of the cargo facilities identified as potentially impacted (the Northwest Air Cargo and FedEx Cargo facilities) could remain in their existing locations without posing a hazard to operations on Runway 10C-28C. **Exhibit IV-23** presents Refined Concept 4, which depicts these two facilities remaining in their existing locations.

### 4.3 Selected Development Plan

The prior section demonstrates that there are several options for accommodating the facilities displaced by the OMP airfield development. Facilities impacted in each of the support facility areas (Northwest Maintenance Area, Southwest Cargo Area, and the former military site) can be redeveloped within the area in which they currently exist. In this manner, operational characteristics, such as airfield access and ground access, associated with the facilities will remain consistent with current activities. Furthermore, each of these areas has additional land area available for expansion if necessary.

While several possible configurations for these areas are presented, ultimate decisions regarding relocation of facilities and their configuration/location will occur through airline (tenant) decisions and negotiations with DOA. For the purposes of the Airport Layout Plan, development concepts are presented for the Southwest Cargo Area, Northwest Maintenance Area, and former military site that depict generic facilities sized consistent with the impacted facility footprints. Other areas within each site that could provide area for potential facility expansion, or accommodate a different configuration/location of these displaced facilities, are also identified. **Exhibits IV-24 and IV-25**

present the concepts included on the ALP for the Northwest Maintenance Area/former military area, and Southwest Cargo Area, respectively.

Prior sections discussed the potential Support/Ancillary Facility requirements. **Table IV-2** summarizes these requirements. As shown, the potential for facility growth is primarily in cargo facilities and airport maintenance facilities.

**Table IV-2**

Facility Requirements Summary

	Existing Facilities Available (Acres)	Facility Requirements (Acres)				
		Recommended Facilities for Existing Conditions	2007	2009	2013	2018
Cargo Facilities	263.0	212.8	234.6	261.9	287.9	315.9
Aircraft Maintenance	222.0	211.8	211.8	211.8	211.8	211.8
GSE Maintenance	32.6	20.8	23.3	23.9	25.2	26.8
Flight Kitchens	16.8	8.3	8.9	9.3	10.0	11.0
Airport Maintenance & DOA	60.5	60.5	73.9	90.8	105.9	115.0
GA/FBO	6.5	13.2	13.2	13.2	13.2	13.2
Total	<b>601.4</b>	<b>527.4</b>	<b>565.7</b>	<b>610.9</b>	<b>654.1</b>	<b>693.8</b>

Sources: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

As shown, only cargo facilities, Airport Maintenance/DOA and GA/FBO facilities require more space within the planning horizon than currently occupied. Approximately 114 acres of additional space is needed to accommodate the expansion requirements for these facilities. Based on support facility areas depicted on the ALP, significant space is available to accommodate these potential needs. **Table IV-3** presents the space available beyond that needed for displaced facilities in each support facility area.

**Table IV-3**

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**Developable Area**

<b><u>Support Facility Area</u></b>	<b><u>Developable Area</u></b>
Northwest Maintenance	204 Acres
Former Military Site	36 Acres
Southwest Cargo Area	96 Acres
<b>Total</b>	<b>336 Acres</b>

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Sources: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

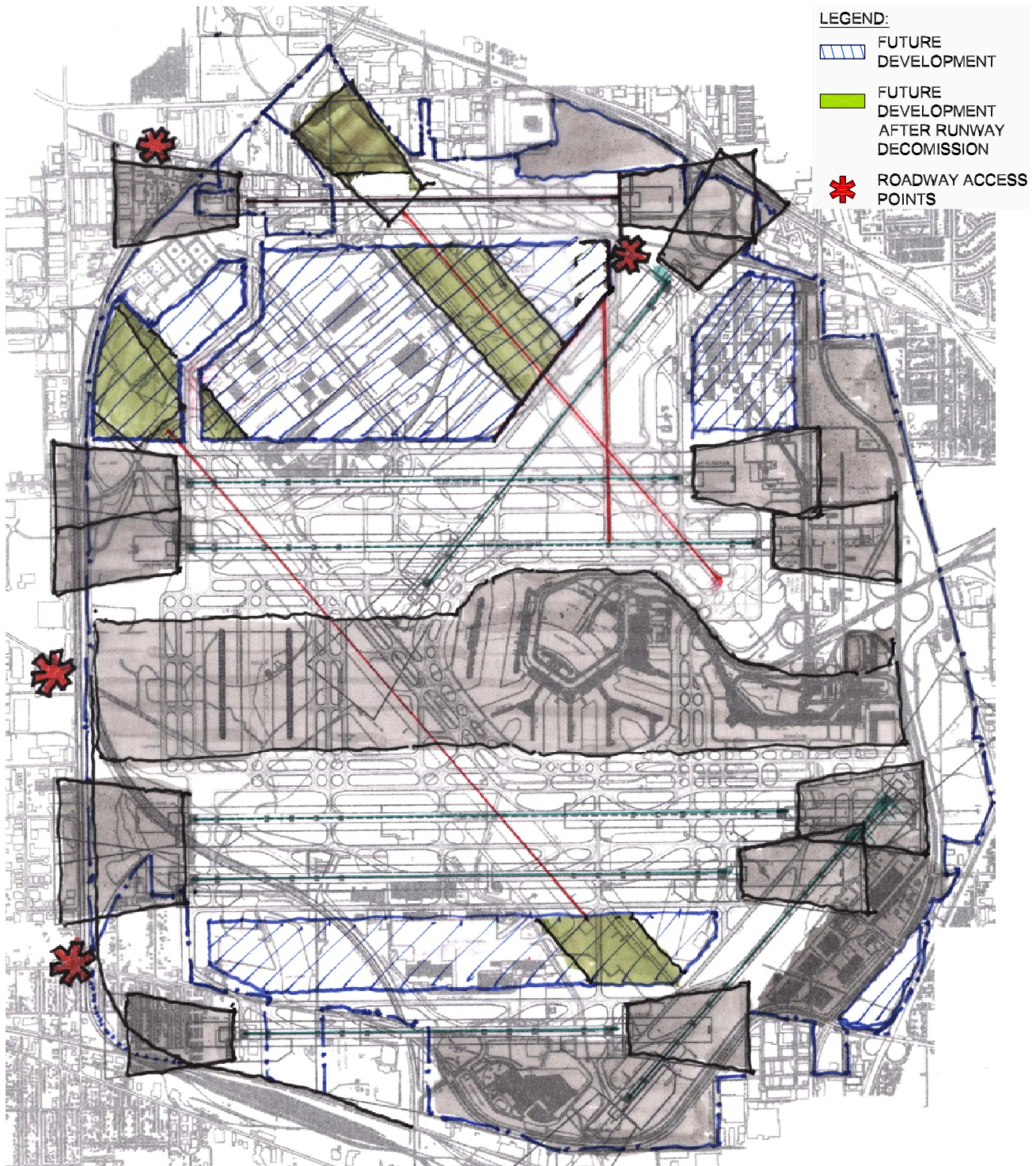
As shown, approximately 336 acres of developable area remains available after accommodation of the displaced facilities.



# EXHIBITS

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## SECTION IV



Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-1



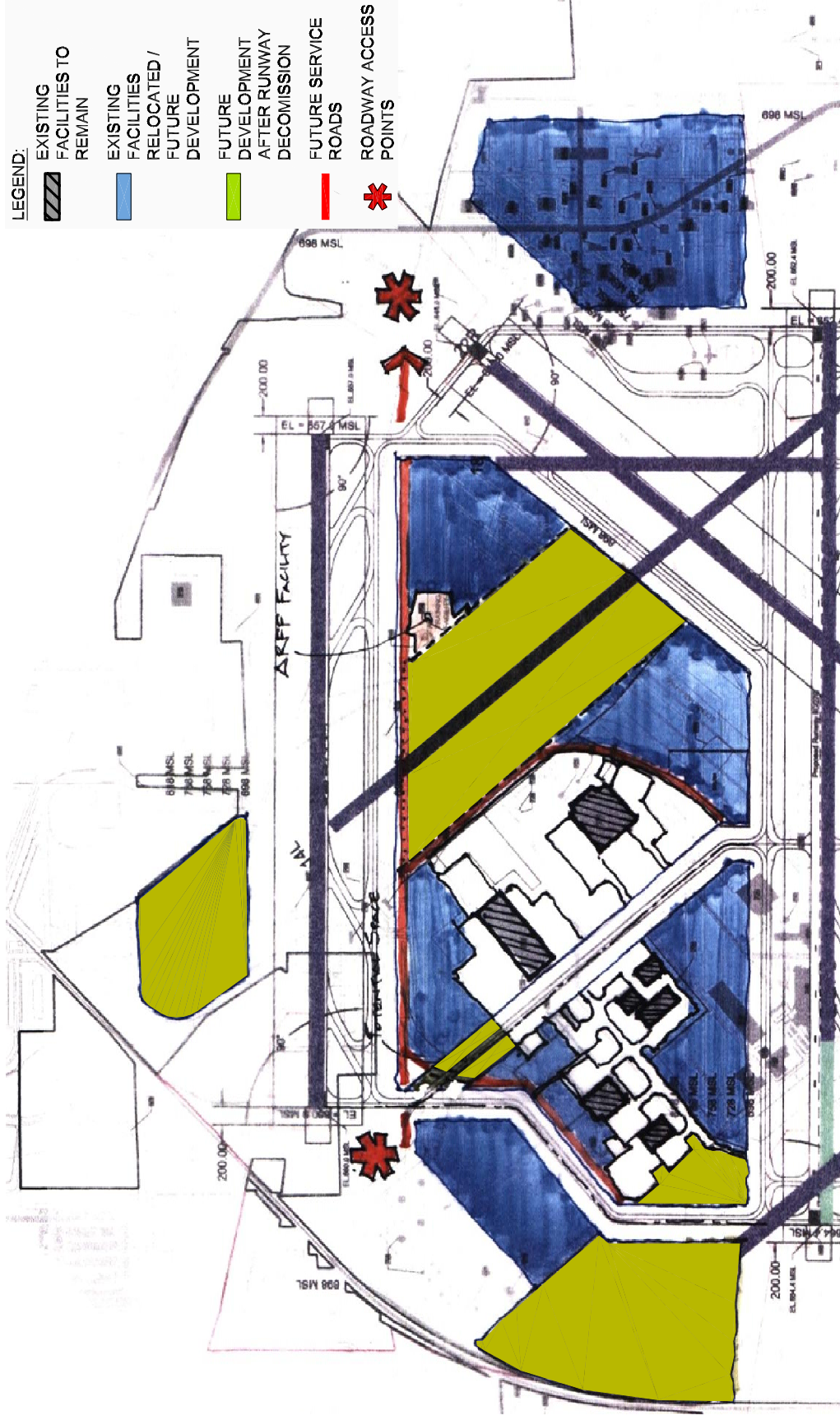
## Available Development Areas

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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-2

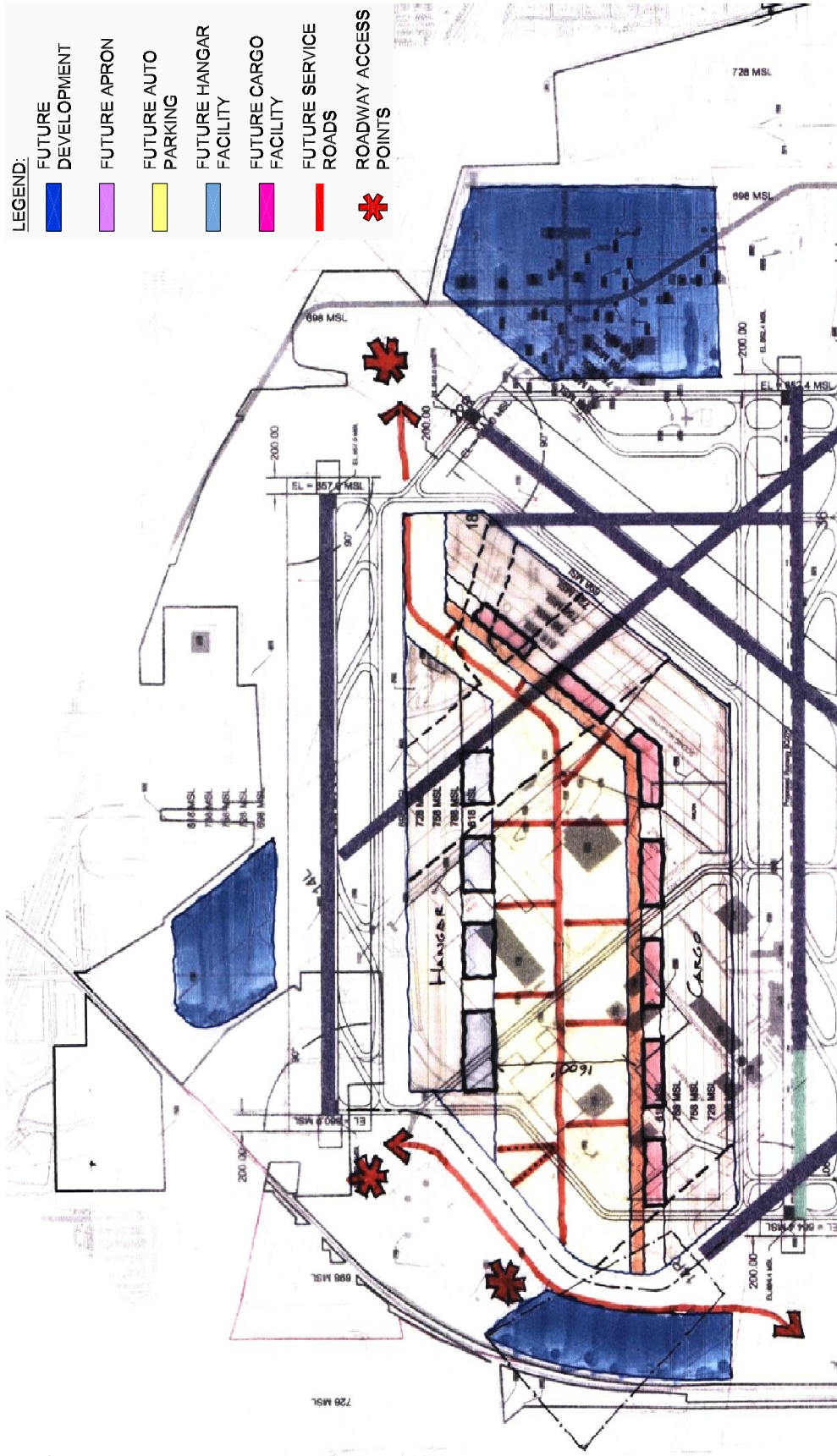


## North Airfield Development Areas

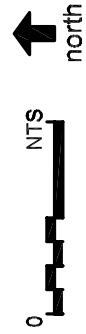
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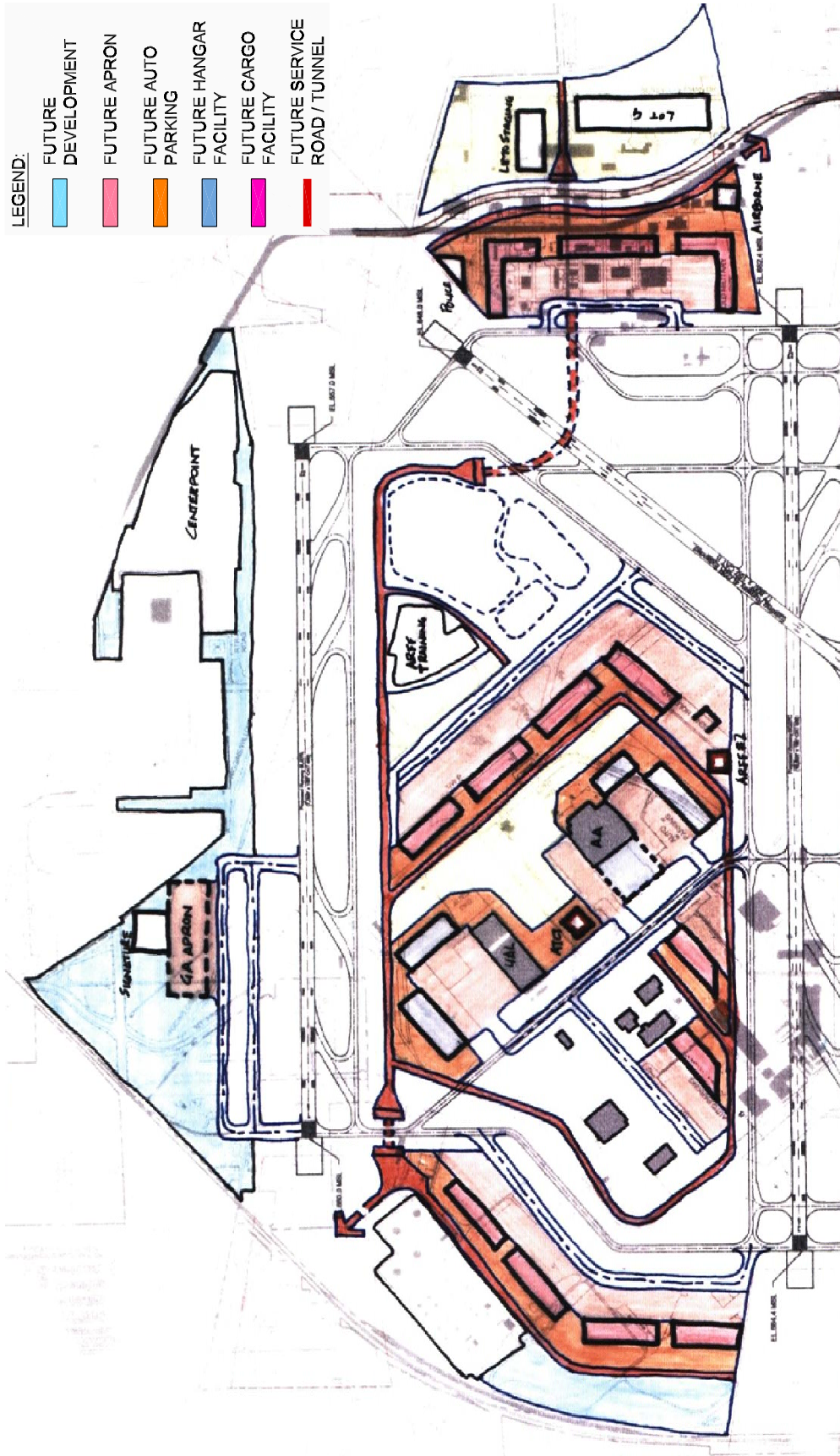
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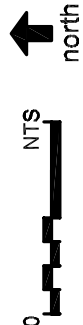
Exhibit IV-3

## North Airfield Area Initial Concept 1





Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

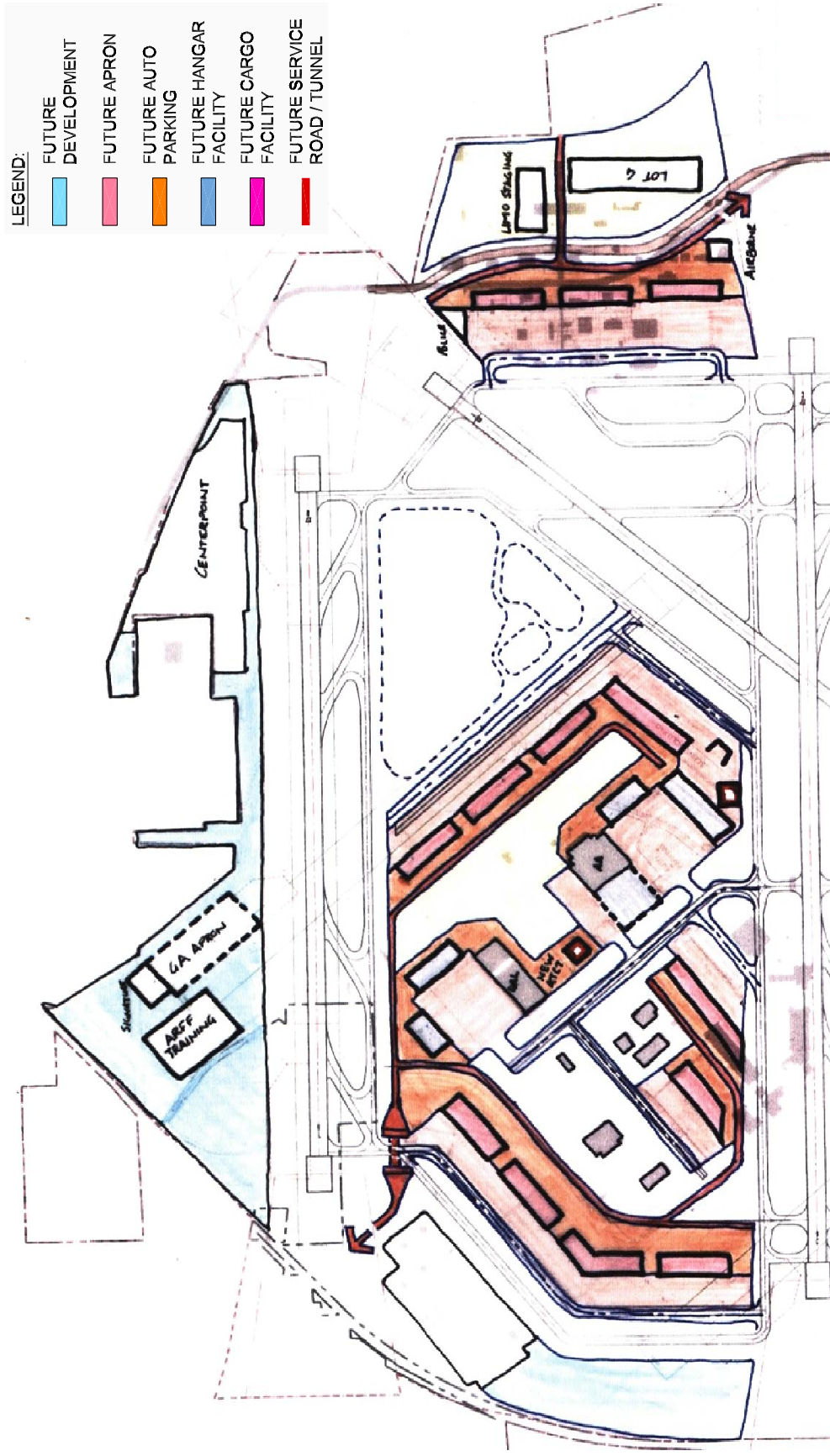


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**Exhibit IV-4**  
**North Airfield Area**  
**Initial Concept 2**



Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-5

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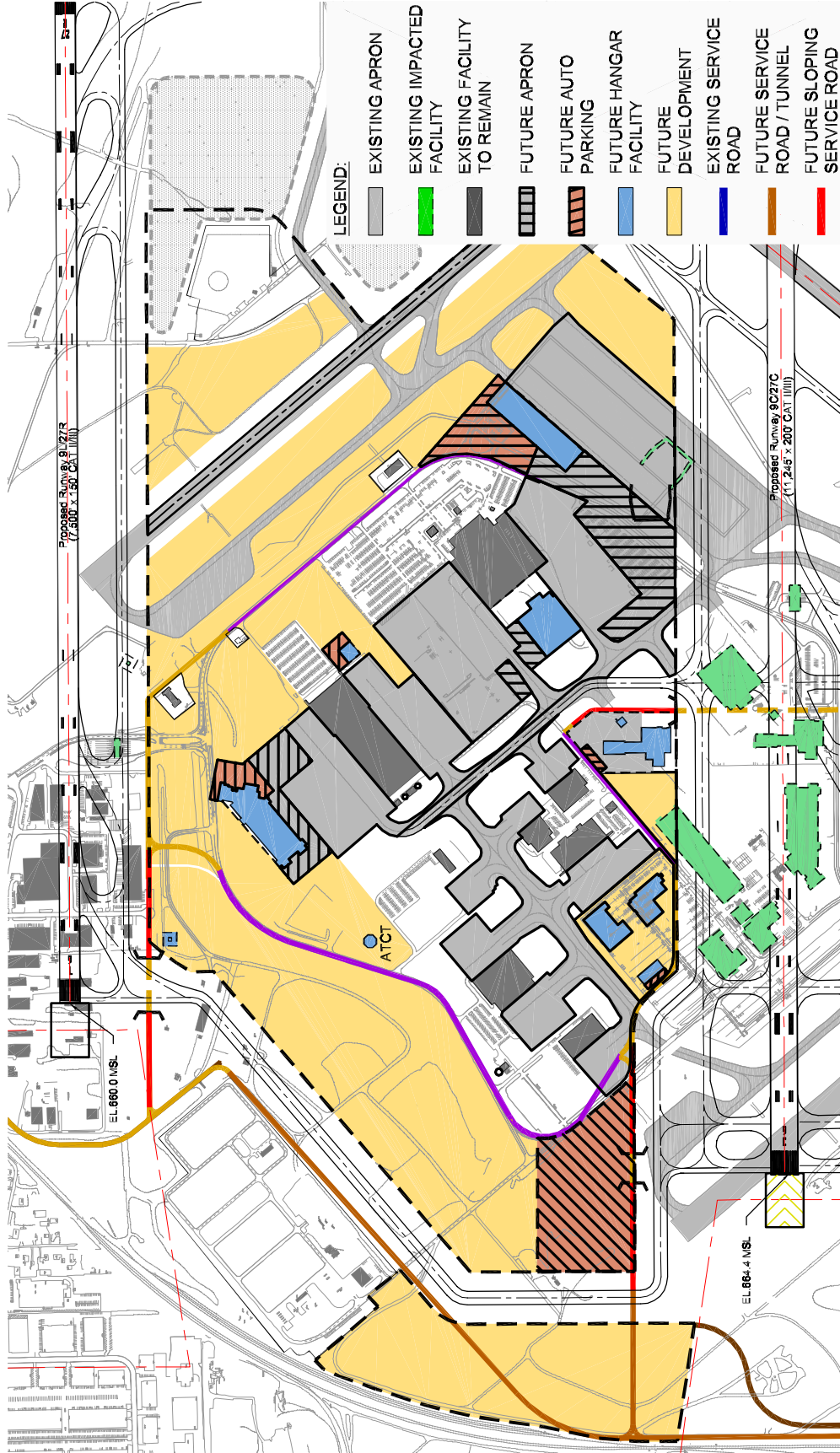
## North Airfield Area Initial Concept 3

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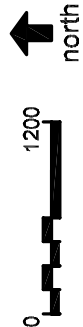
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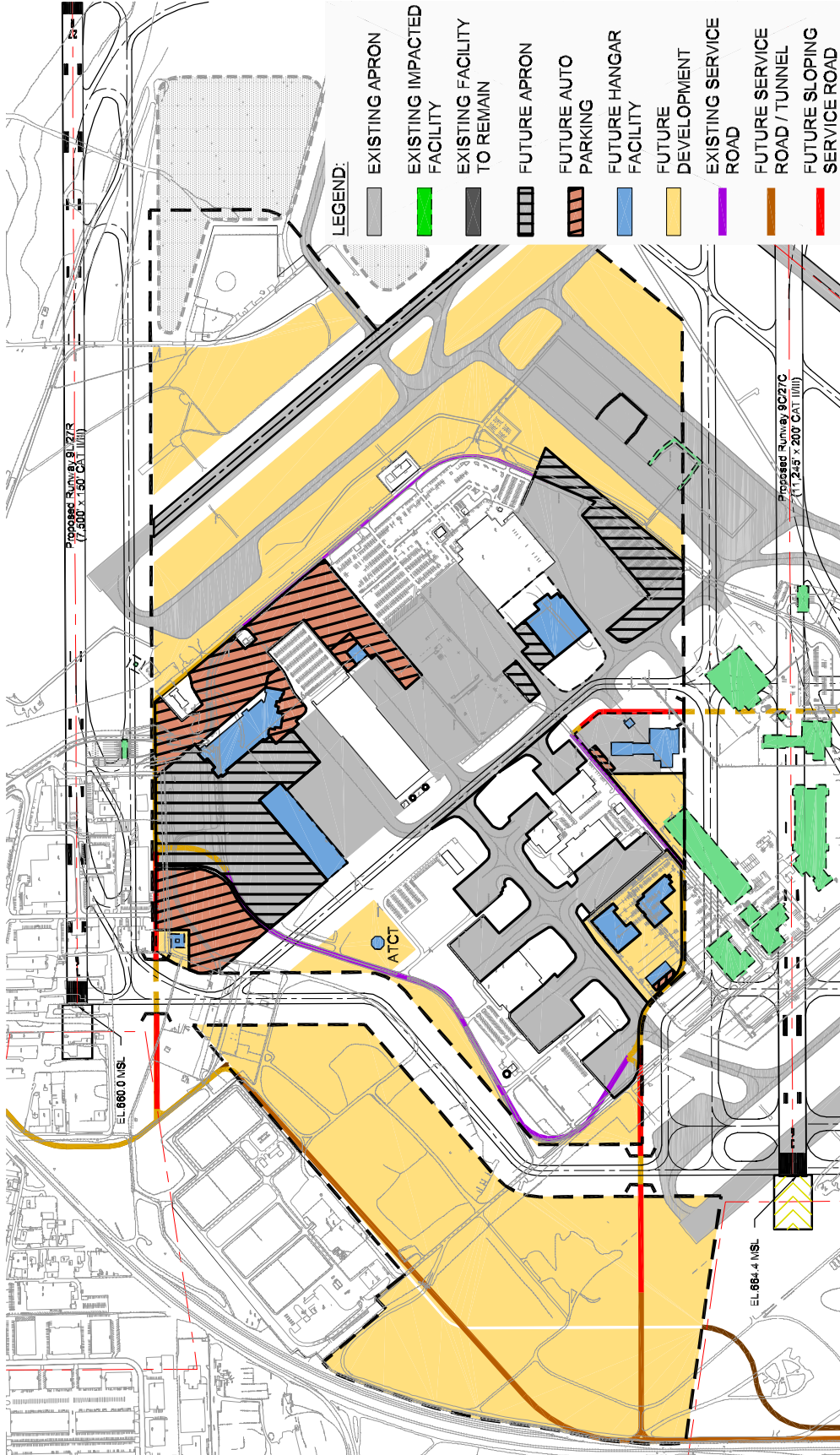
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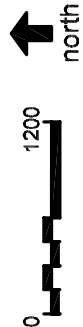
Exhibit IV-6

# Northwest Maintenance Area Refined Concept 1

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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



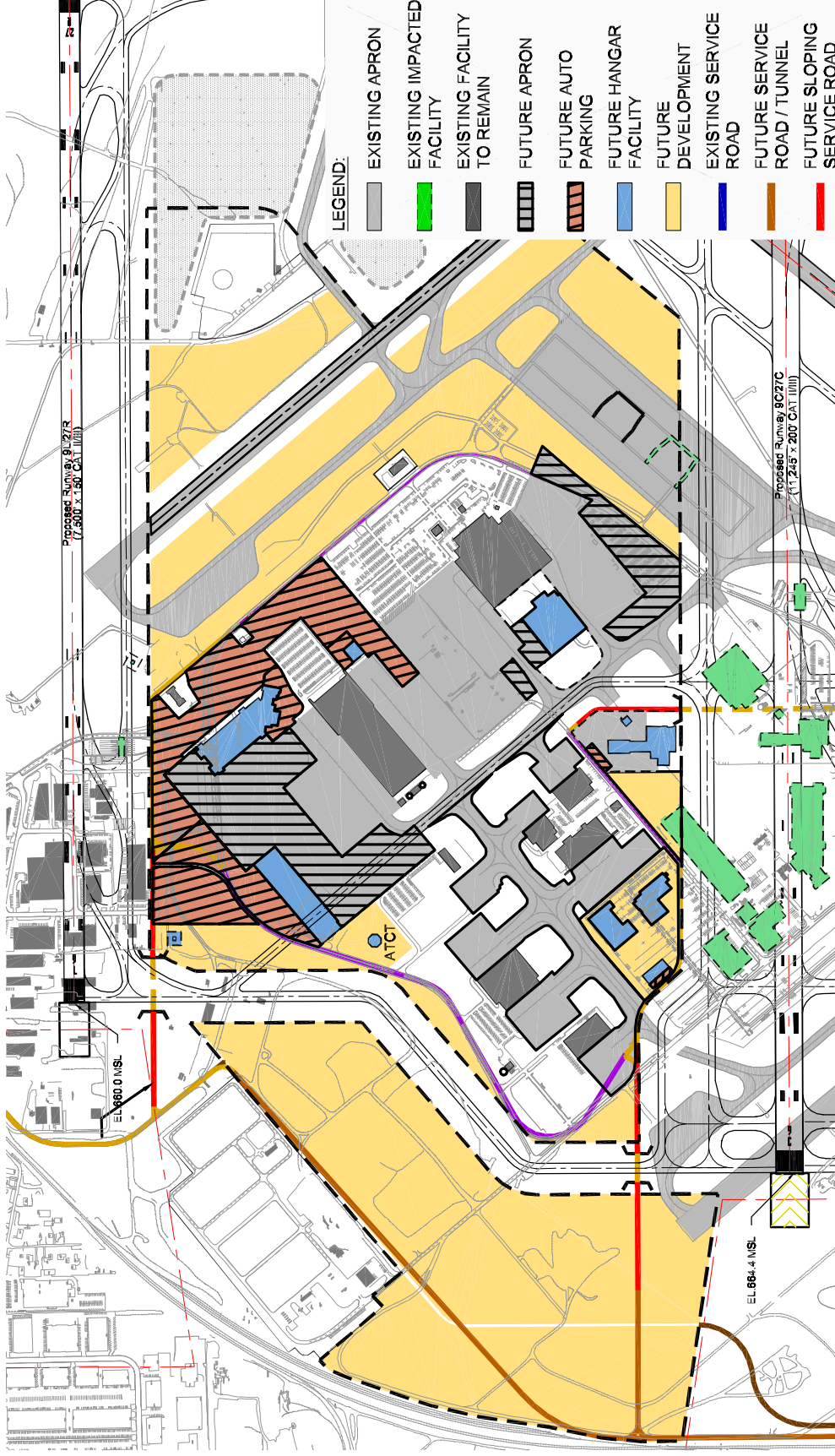
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## Exhibit IV-7 Northwest Maintenance Area Refined Concept 2





Source: Ricondo & Associates, Inc.  
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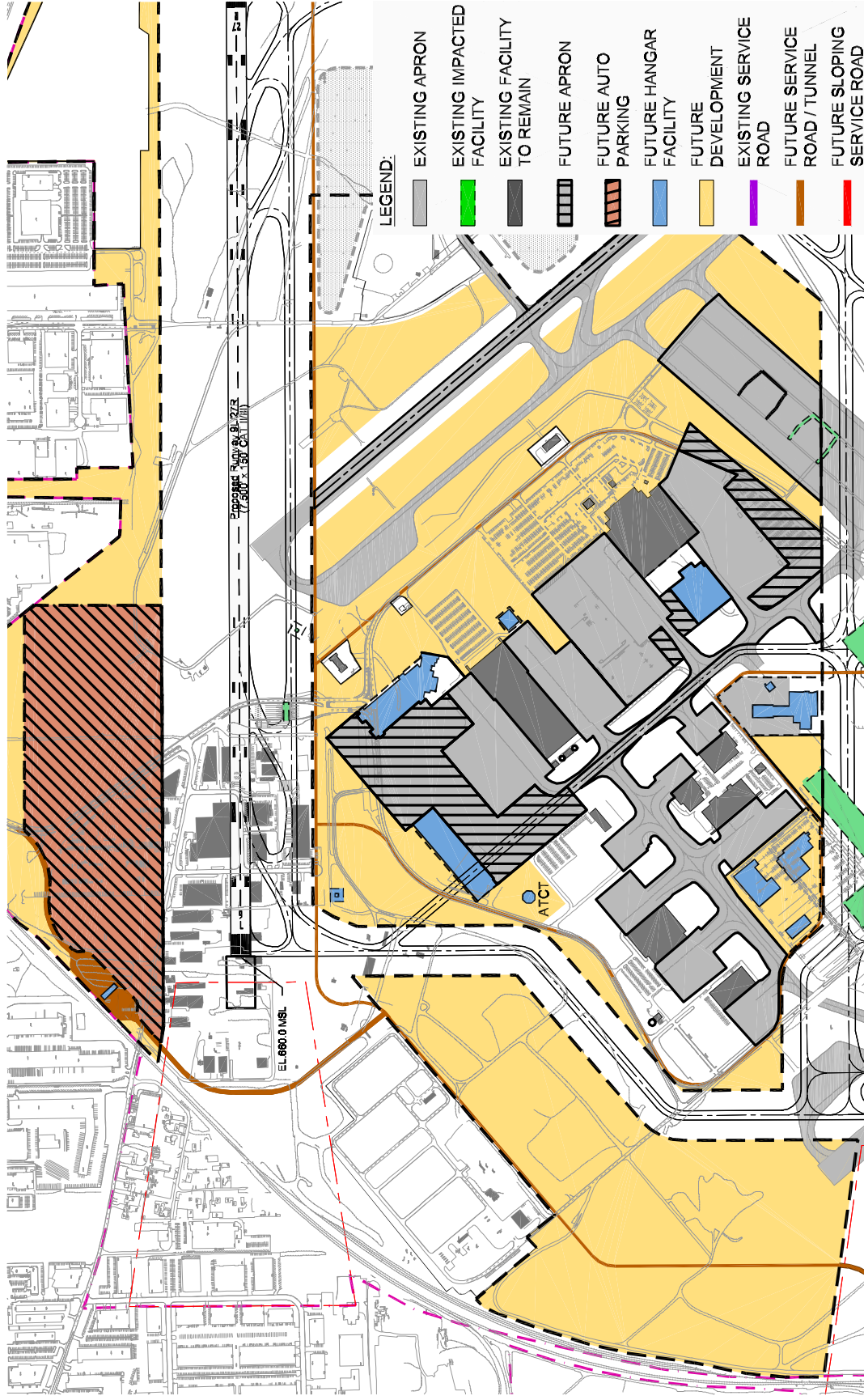
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Exhibit IV-8

## Northwest Maintenance Area Refined Concept 3

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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-9



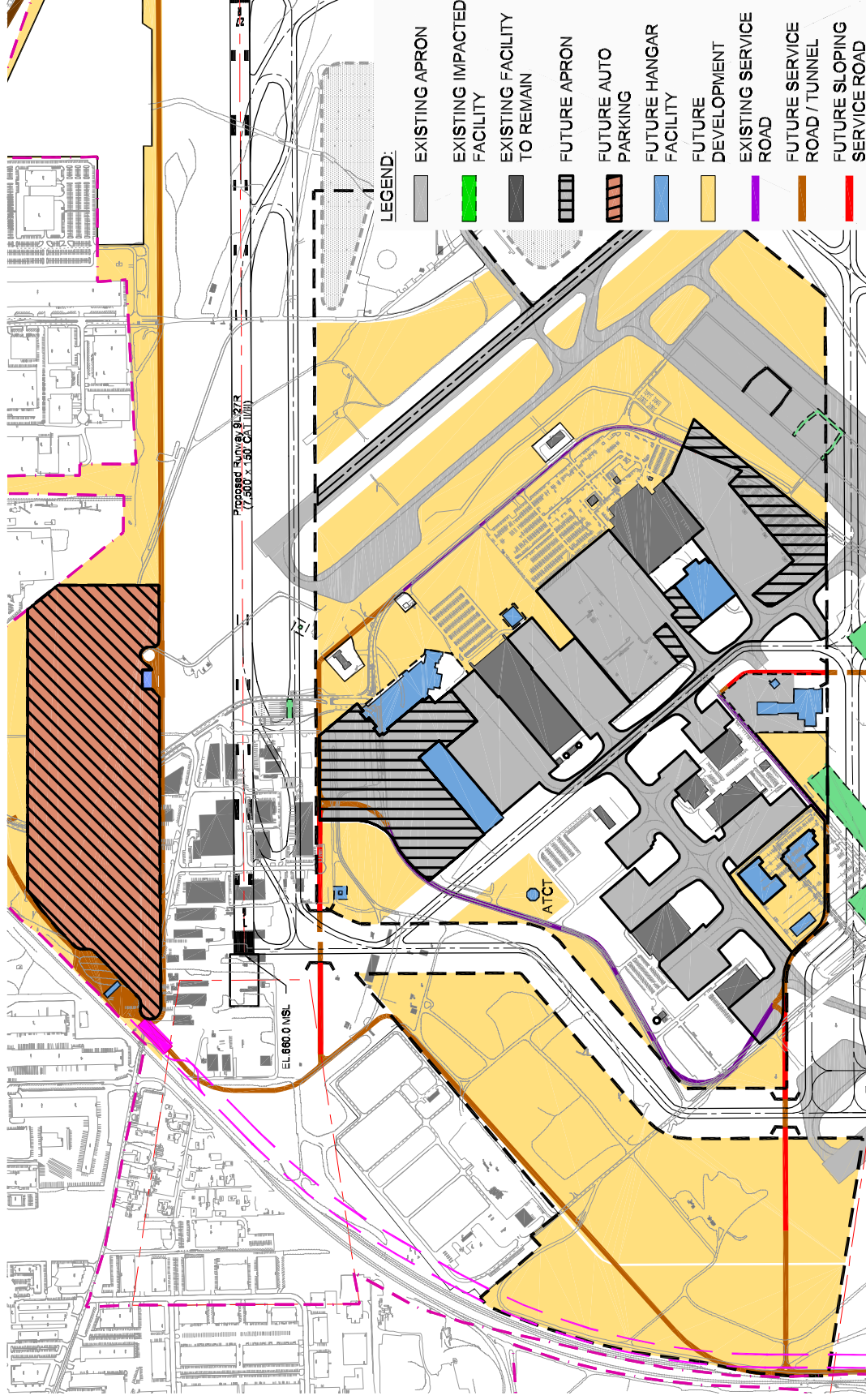
## Northwest Maintenance Area Refined Concept 4

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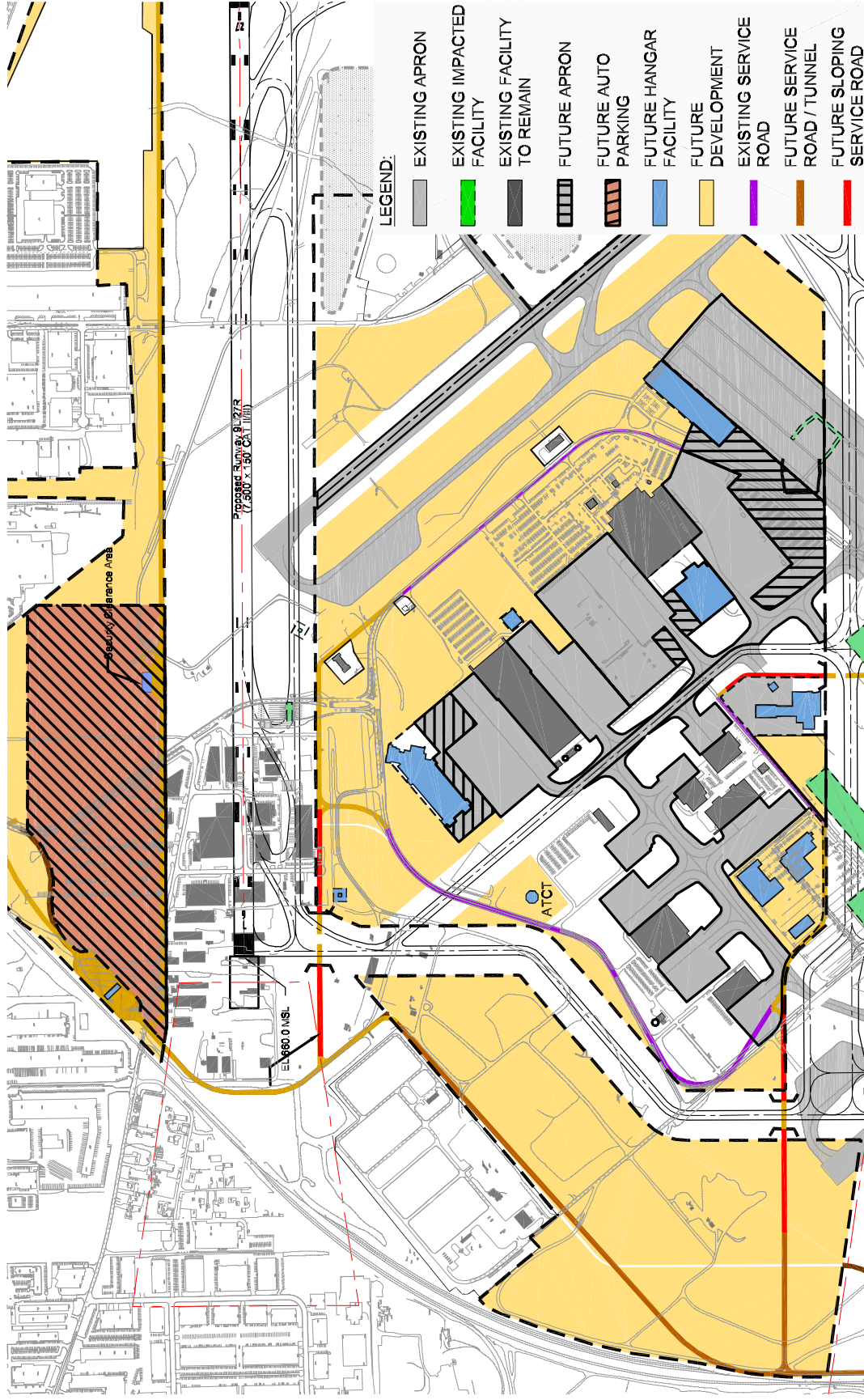


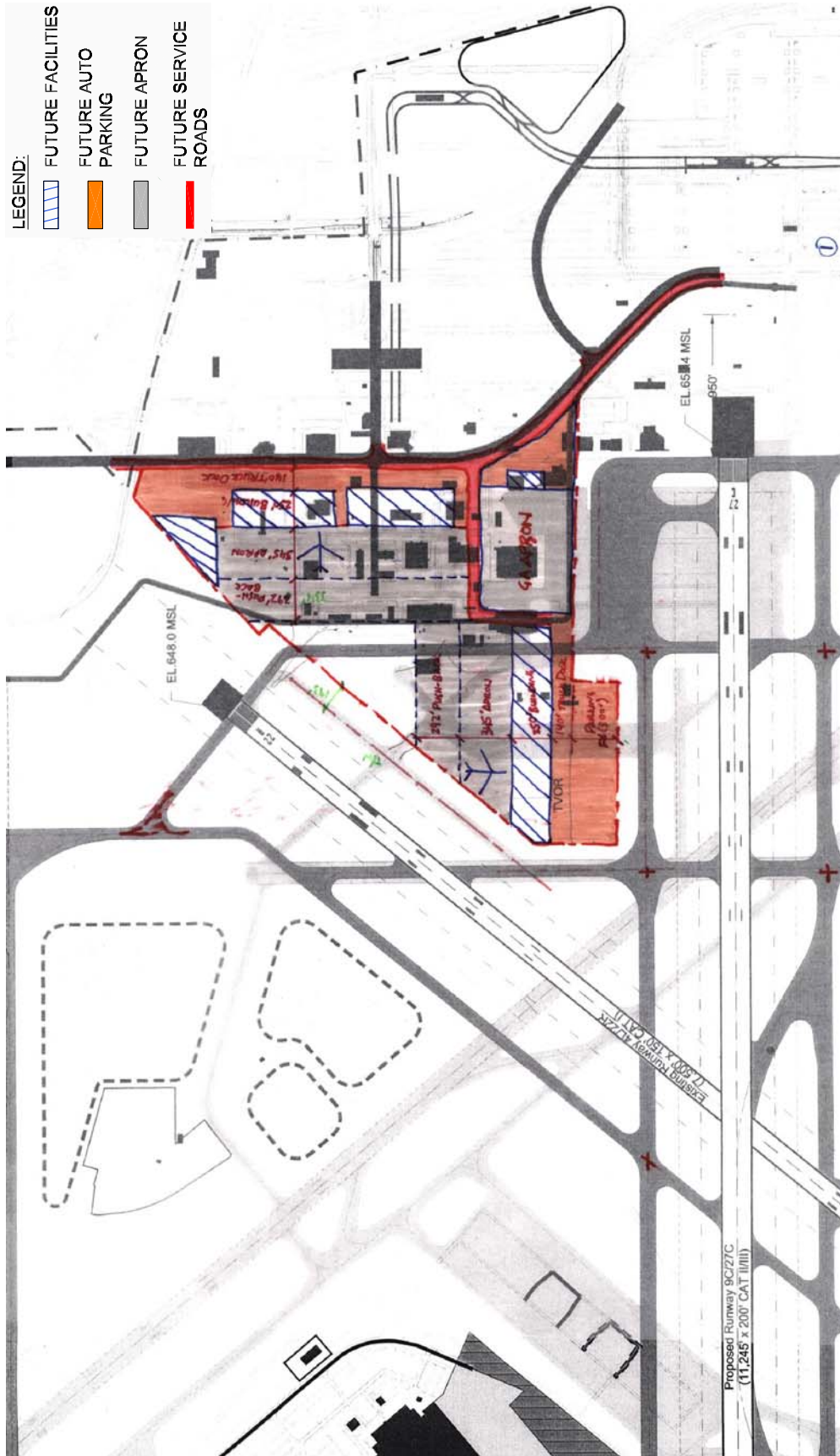
Exhibit IV-11

## Northwest Maintenance Area Refined Concept 6

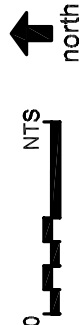
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Exhibit IV-13

## Former Military Area Refined Concept 2





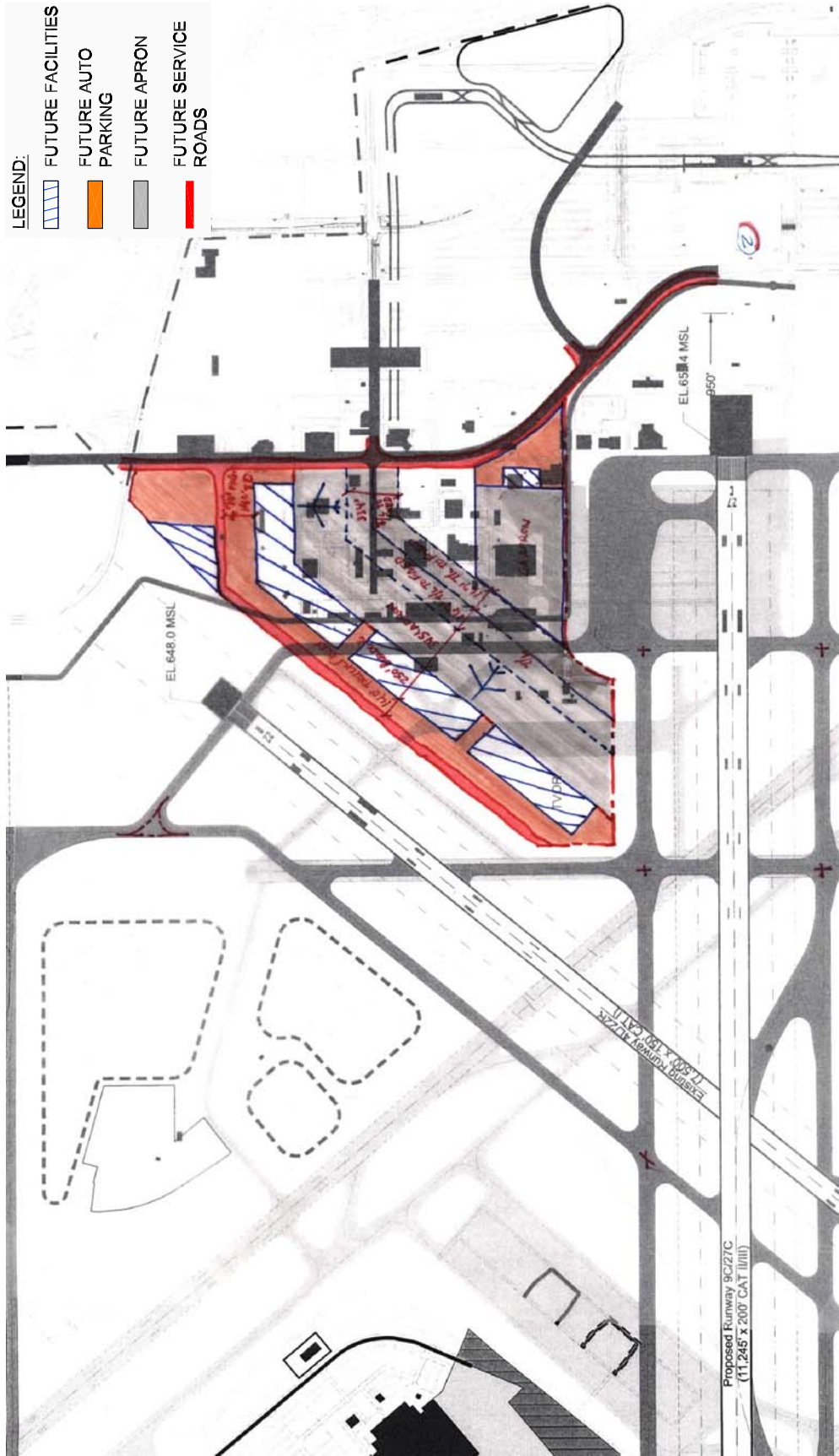
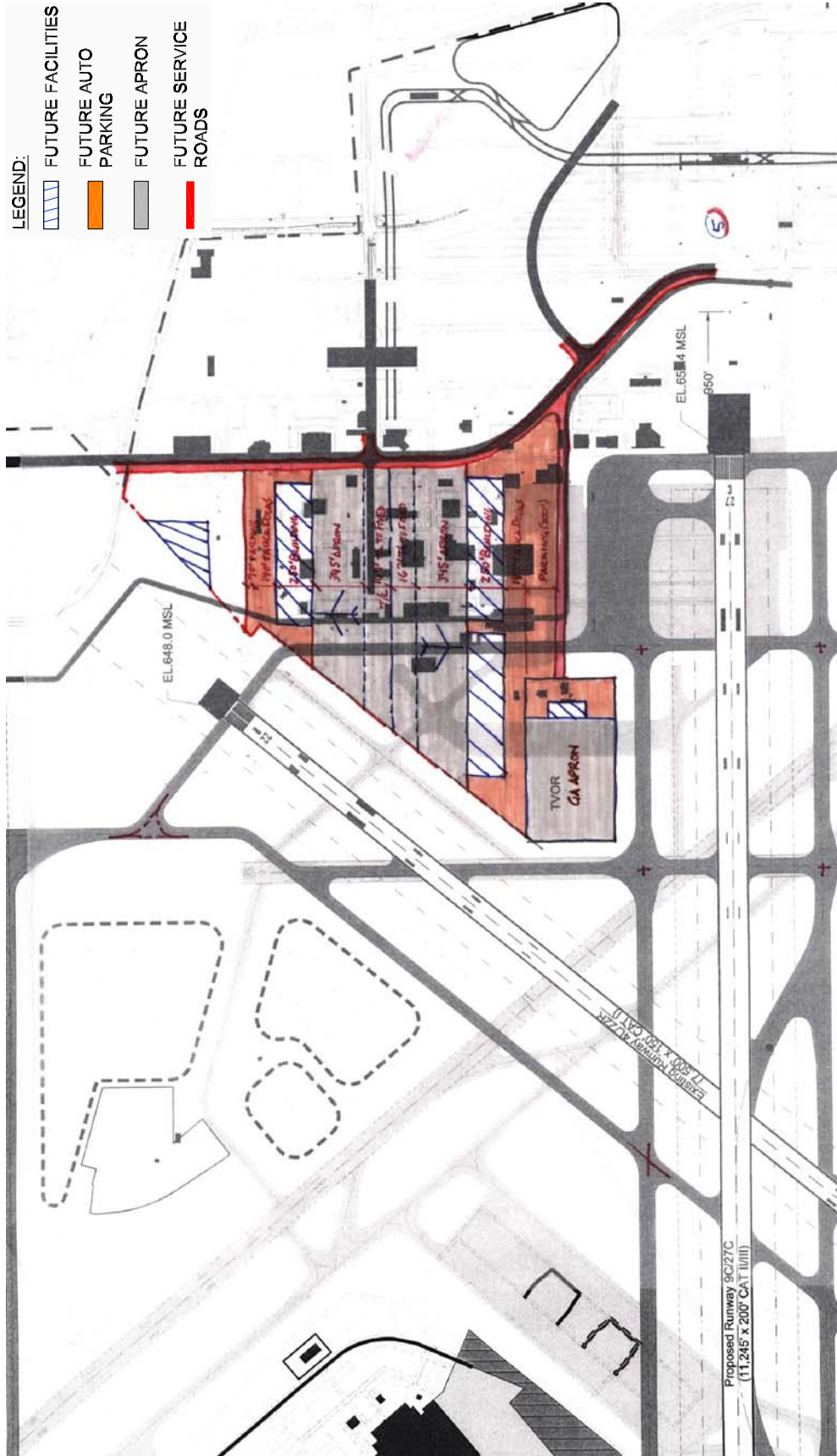


Exhibit IV-15

## Former Military Area Refined Concept 4

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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-16

0 100 200' NTS

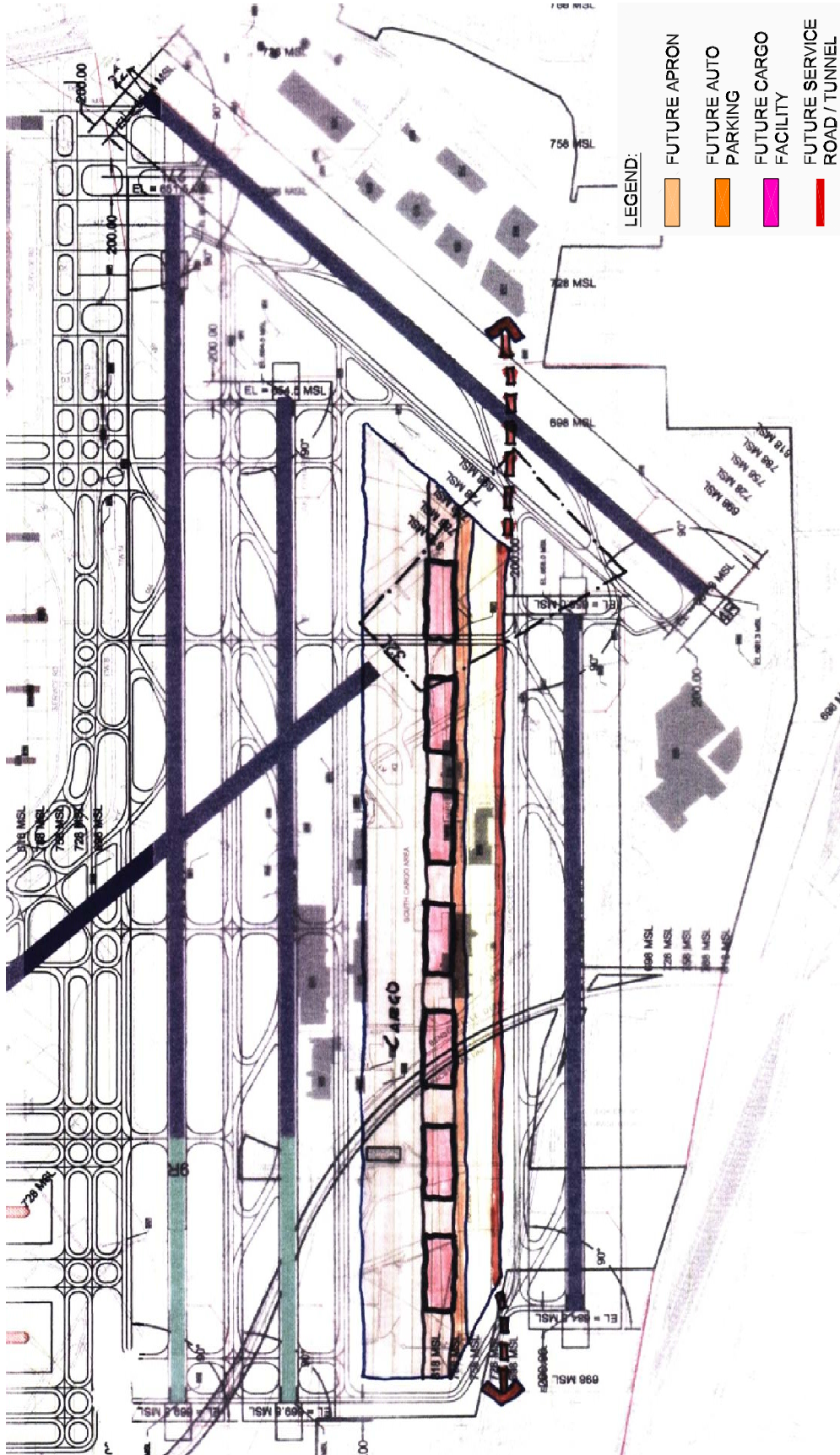
↑ north

## Former Military Area Refined Concept 5

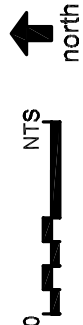
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O'Hare Modernization Program  
Concept Development/Refinement

February 2003  
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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



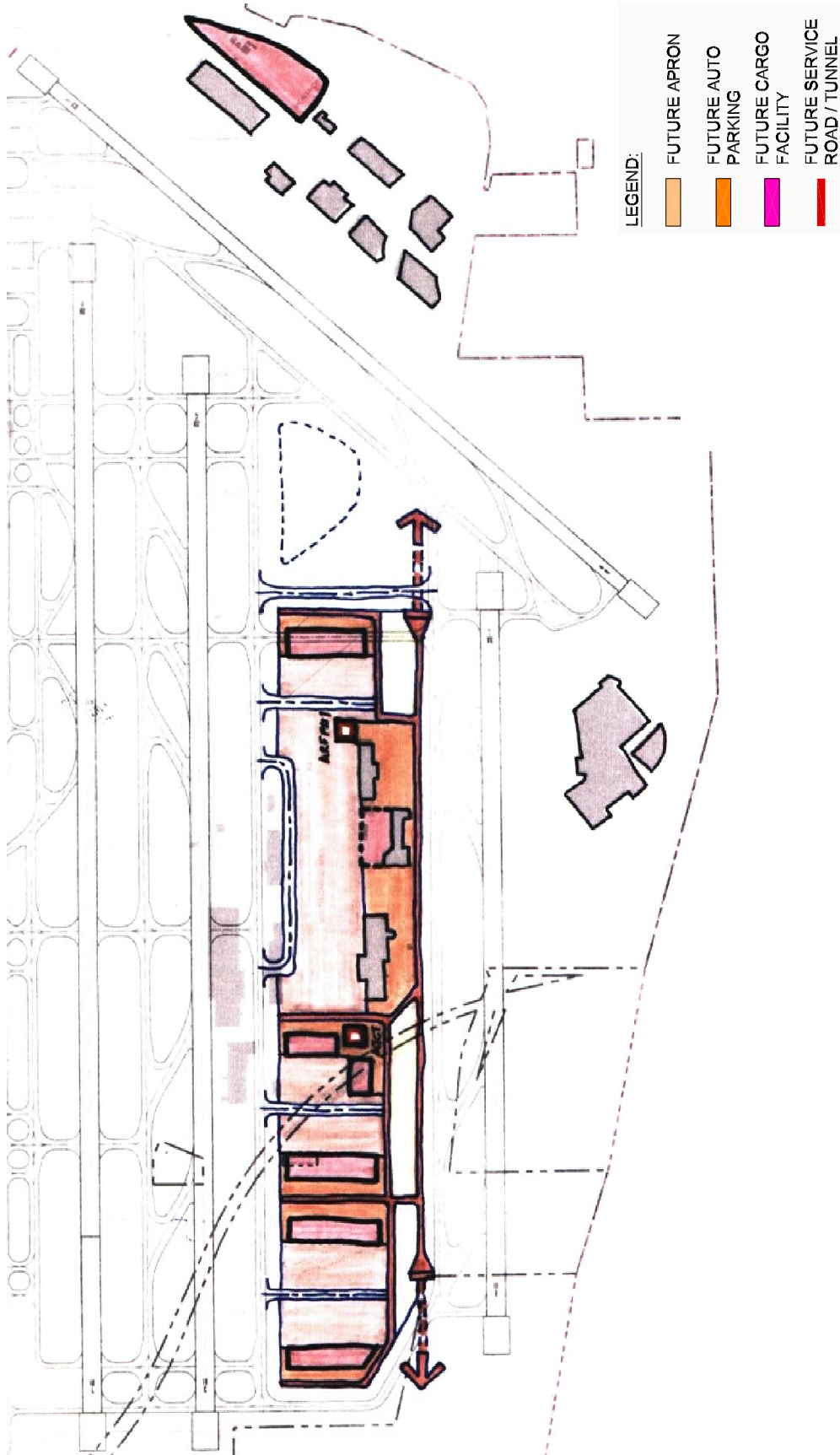
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Concept Development/Refinement

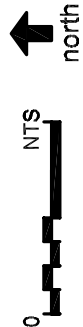
February 2003  
DRAFT

## Exhibit IV-17

### Southwest Cargo Area Initial Concept 1



Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



Drawing: Z:\Chicago ORD\OWP\Facilities Documentation\Concept Refinement\_Support\Current\Exhibit IV-18 divg\_Layout: 8.dwg, Landscape Feb 27, 2003, 10:45am

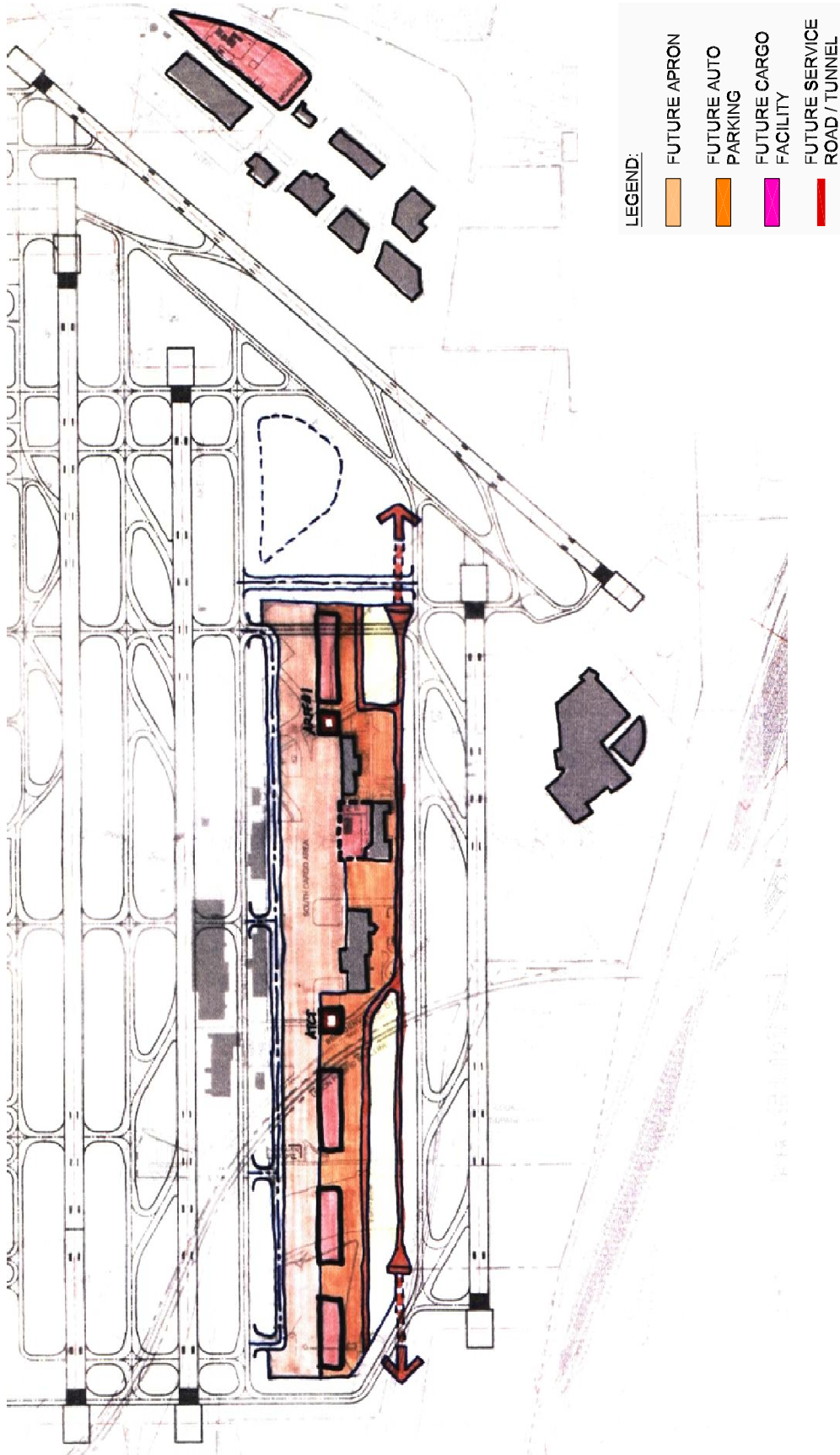
O'Hare Modernization Program  
Concept Development/Refinement

Exhibit IV-18

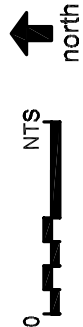
## Southwest Cargo Area Initial Concept 2

February 2003  
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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



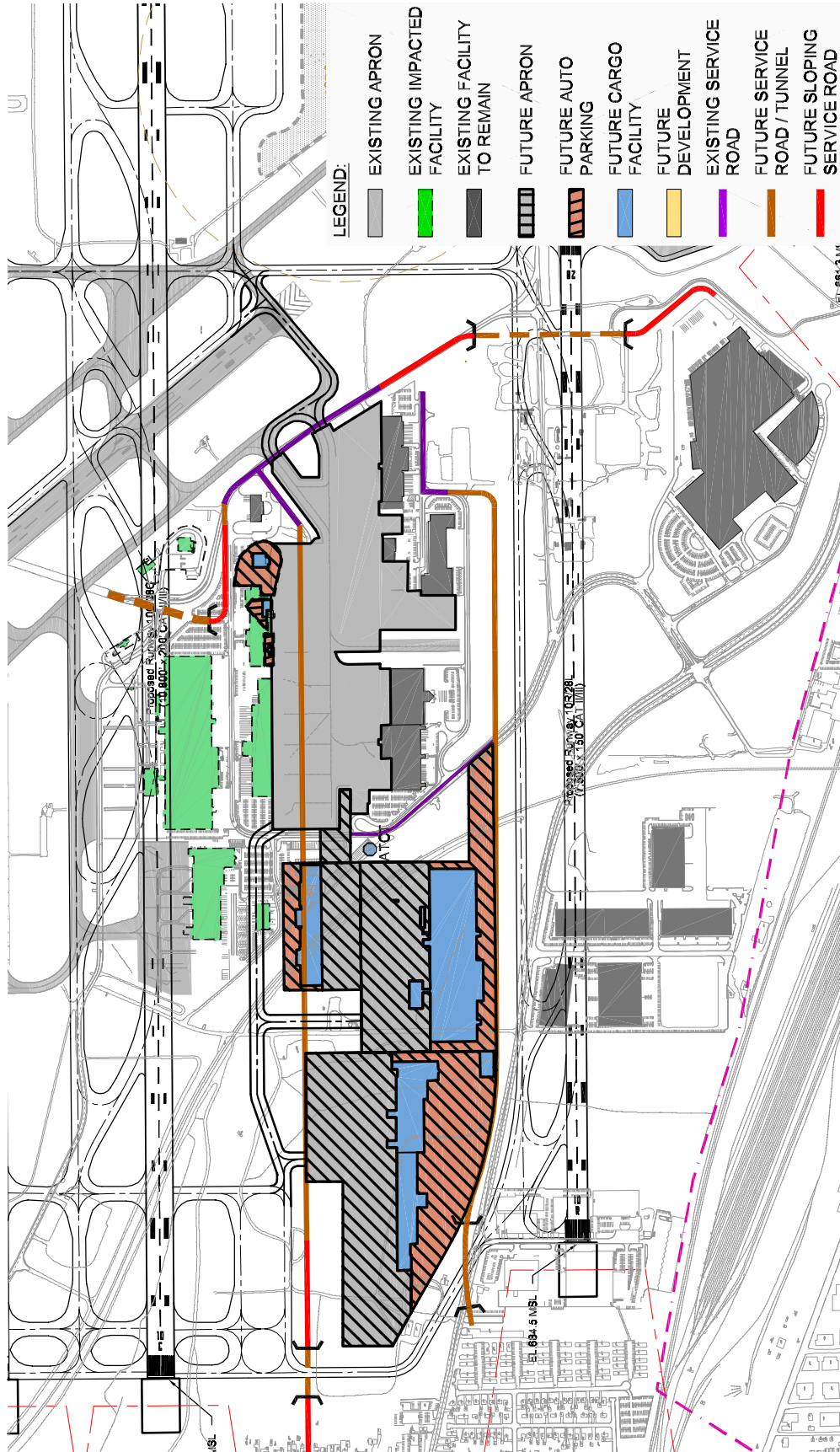
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O'Hare Modernization Program  
Concept Development/Refinement

Exhibit IV-19

## Southwest Cargo Area Initial Concept 3

February 2003  
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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



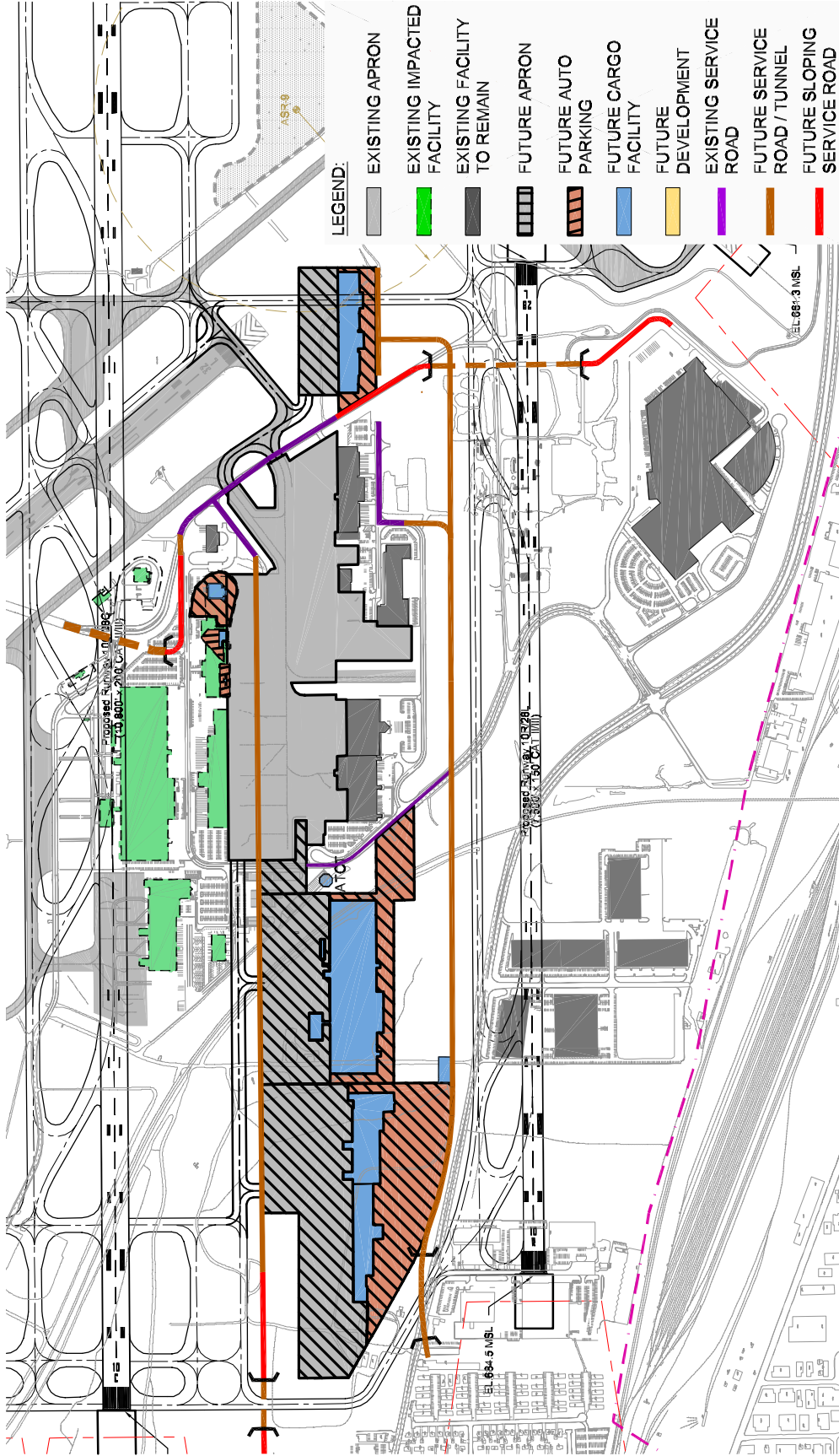
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O'Hare Modernization Program  
Concept Development/Refinement

February 2003  
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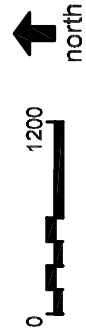
Exhibit IV-20

## Southwest Cargo Area Refined Concept 1



Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-21



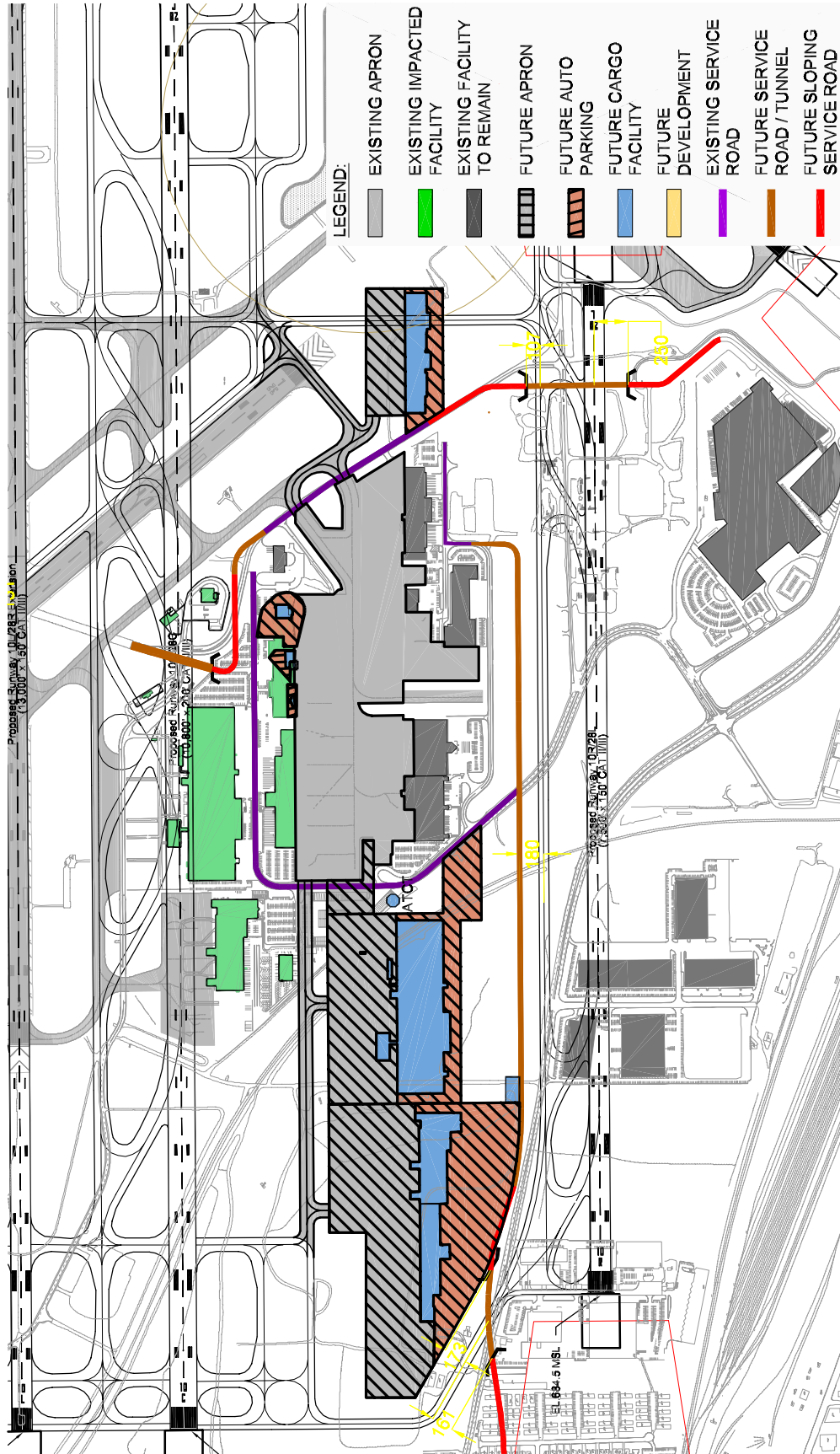
## Southwest Cargo Area Refined Concept 2

Drawing: Z:\Chicago ORD\OWP\Facilities\Documentation\Concept Refinement\_Support\Current\Exhibit IV-21.dwg, Layout: 8.dwg, Landscape, Feb 27, 2003, 10:58am

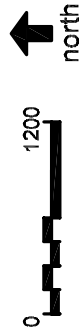
O'Hare Modernization Program  
Concept Development/Refinement

February 2003  
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Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.



Drawing: Z:\Chicago ORD\DWG\Facilities Documentation\Concept Refinement\_Support\Current\Exhibit IV-22 divg\_Layout: 8.dwg Landscape Feb 27, 2003 10:56am

O'Hare Modernization Program  
Concept Development/Refinement

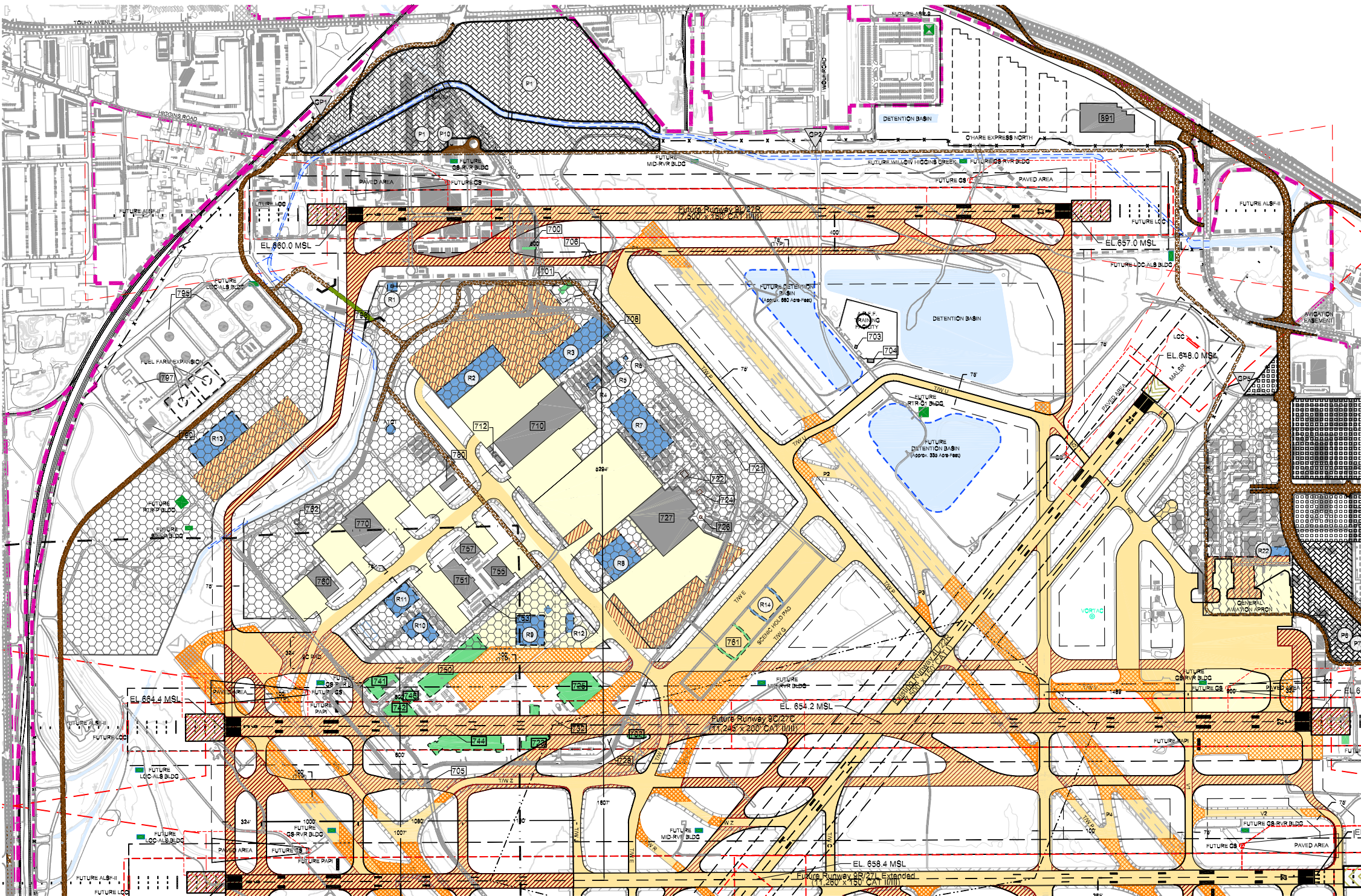
February 2003  
DRAFT

## Exhibit IV-22

### Southwest Cargo Area Refined Concept 3







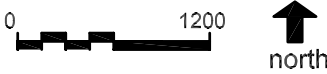
FUTURE FACILITY LIST		
(P1)	700	FUTURE EMPLOYEE PARKING
(P10)	700	NORTHWEST EMPLOYEE LOT CHECKPOINT
(R1)	708	FUTURE EXPLOSIVE CHAMBER
(R2)	780	FUTURE UAL HANGAR 8/5A
(R3)	744	FUTURE UAL GROUND EQUIP. MAINTENANCE BLDG
(R4)	701	FUTURE DOA COMMUNICATIONS CENTER
(R5)	746	FUTURE UAL OFFICE AND MEDICAL PERSONNEL BLDG
(R6)	708	FUTURE COMMONWEALTH EDISON SUBSTATION
(R7)	511	FUTURE SKY CHIEF FLIGHT KITCHEN
(R8)	725	FUTURE AAL MAINTENANCE HANGAR #2
(R9)	723	FUTURE AAL GROUND EQUIP. MAINTENANCE BLDG & PUMP HOUSE
(R10)	741	FUTURE DOBBS FLIGHT KITCHEN #1
(R11)	742	FUTURE DOBBS FLIGHT KITCHEN #2
(R12)	702	FUTURE A.R.F.F. STATION #2
(R13)	510	FUTURE LYNX AIR CARGO
(R14)	781	FUTURE GROUND RUN-UP ENCLOSURE
(R22)	621	FUTURE SIGNATURE FLIGHT SERVICES TERMINAL

EXISTING FACILITY LIST		
703	ARFF TRAINING CONTROL CENTER BUILDING #1 & PUMPHOUSE BUILDING #2	
704	POST #2 GUARDHOUSE	
705	UAL SERVICE CENTER AND BOILER & PUMPHOUSE	
710	LIGHTING UTILITY	
721	AAL HANGAR #1	
727, 728, 729	FIRE PUMP HOUSES & TRITURATOR	
728	SANITARY UTILITY	
751	DELTA HANGAR	
753	PUMP HOUSE UTILITY	
755	NORTHWEST MAINTENANCE	
757	UAL MAINTENANCE	
760	NORTHWEST/AMERICAN MAINTENANCE	
770	UAL MAINTENANCE & PUMPHOUSE	
782	CONTINENTAL VEHICLE MAINTENANCE	
795, 796 & 797	FUEL FARM, AGI (LOCKHEED) & FIRE PUMP HOUSE	
798	AIRPORT REPAIR & CONSTRUCTION (ARC) COMPLEX	

- LEGEND**
- EXISTING GUARD POSTS
  - FUTURE GUARD POSTS
  - EXISTING AIRFIELD PAVEMENT
  - FUTURE AIRFIELD PAVEMENT
  - AIRFIELD PAVEMENT DEMOLITION
  - EXISTING APRON PAVEMENT
  - EXISTING AIRPORT BUILDING
  - FUTURE TERMINAL BUILDING
  - EXISTING AIRPORT BUILDINGS IN AOA TO BE RELOCATED
  - RELOCATED AIRPORT BUILDINGS PREVIOUSLY IN AOA
  - FUTURE AIRPORT FACILITY
  - FUTURE AVIATION DEVELOPMENT
  - FUTURE ROADWAYS
  - FUTURE TUNNELS
  - FUTURE STRUCTURED PARKING
  - FUTURE SURFACE PARKING
  - FUTURE COLLATERAL DEVELOPMENT
  - CURRENTLY-PLANNED NON-AIRPORT ROADWAY PROJECT
  - FUTURE AIRPORT PROPERTY LINE
  - EXISTING AIRPORT PROPERTY LINE
  - COUNTY LINE
  - RUNWAY PROTECTION ZONE
  - RUNWAY SAFETY AREA
  - OBJECT FREE AREA
  - AIRCRAFT OPERATIONS AREA (AOA)
  - RUNWAY VISIBILITY ZONE
  - GLIDE SLOPE CRITICAL AREA
  - LOCALIZER CRITICAL AREA
  - FUTURE AIRPORT TRANSIT SYSTEM
  - AUTOMATED PEOPLE MOVER SYSTEM (UNDERGROUND)
  - RELOCATED RAILROAD

Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-24



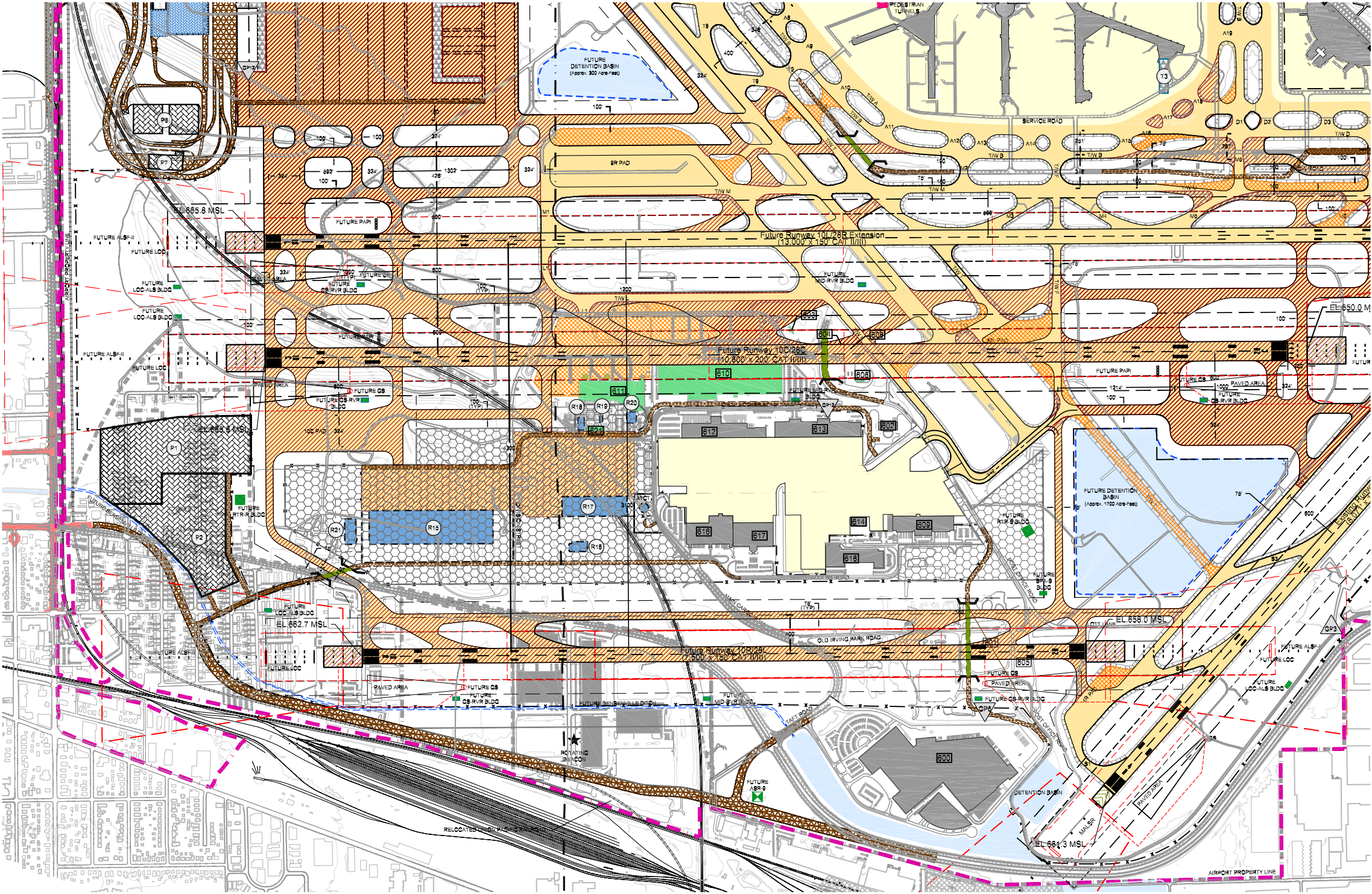
Northwest Maintenance Area/Former Military Area

Drawing: Z:\Chicago\ORD\OPI\Facilities\Documentation\Concept Refinement\Support\Current\Exhibit IV-24.dwg, Layout: North Maintenance, Mar 07, 2003, 2:59pm

O'Hare Modernization Program  
Concept Development/Refinement

February 2003  
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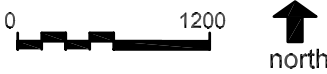
FUTURE FACILITY LIST		
(P1)		FUTURE EMPLOYEE PARKING
(P2)		FUTURE LONG TERM PARKING
(P6)		FUTURE LIMO STAGING
(P7)		FUTURE TAXI STAGING
(610)	610	FUTURE UAL CARGO BLDG
(616)	621	FUTURE FEDERAL EXPRESS MAINTENANCE BLDG
(617)	611	FUTURE FEDERAL EXPRESS METROPLEX BLDG
(618)	604	FUTURE SOUTH AIRFIELD LIGHTING VAULT & ELECTRICAL UTILITIES
(619)	603	FUTURE AIR CARGO SIMULATION FACILITY
(620)	606	FUTURE FUELING STATION
(621)	627	FUTURE DELTA AIR FREIGHT
(T3)		FUTURE K CONCOURSE EXTENSION

EXISTING FACILITY LIST		
	600	U.S. POST OFFICE
	601	POST #1 GUARHOUSE
	602	ARFF STATION #1
	605	POST #5A GUARHOUSE
	609	AAL CARGO
	612	FEDERAL EXPRESS FREIGHT
	613	NORTHWEST CARGO
	614	UNITED PARCEL SERVICE
	616	LUFTHANSA CARGO
	617	AIR FRANCE CARGO
	618	KLM ROYAL DUTCH CARGO

- LEGEND**
- GP3 EXISTING GUARD POSTS
  - GP4 FUTURE GUARD POSTS
  - EXISTING AIRFIELD PAVEMENT
  - FUTURE AIRFIELD PAVEMENT
  - AIRFIELD PAVEMENT DEMOLITION
  - EXISTING APRON PAVEMENT
  - EXISTING AIRPORT BUILDING
  - FUTURE TERMINAL BUILDING
  - EXISTING AIRPORT BUILDINGS IN AOA TO BE RELOCATED
  - RELOCATED AIRPORT BUILDINGS PREVIOUSLY IN AOA
  - FUTURE AIRPORT FACILITY
  - FUTURE AVIATION DEVELOPMENT
  - FUTURE ROADWAYS
  - FUTURE TUNNELS
  - FUTURE STRUCTURED PARKING
  - FUTURE SURFACE PARKING
  - FUTURE COLLATERAL DEVELOPMENT
  - CURRENTLY-PLANNED
  - NON-AIRPORT ROADWAY PROJECT
  - FUTURE AIRPORT PROPERTY LINE
  - EXISTING AIRPORT PROPERTY LINE
  - COUNTY LINE
  - RUNWAY PROTECTION ZONE
  - RUNWAY SAFETY AREA
  - OBJECT FREE AREA
  - AIRCRAFT OPERATIONS AREA (AOA)
  - RUNWAY VISIBILITY ZONE
  - GLIDE SLOPE CRITICAL AREA
  - LOCALIZER CRITICAL AREA
  - FUTURE AIRPORT TRANSIT SYSTEM
  - AUTOMATED PEOPLE MOVER SYSTEM (UNDERGROUND)
  - RELOCATED RAILROAD

Source: Ricondo & Associates, Inc.  
Prepared by: Ricondo & Associates, Inc.

Exhibit IV-25



Southwest Cargo Area Plan

Drawing: Z:\Chicago\ORD\OPI\Facilities\Documentation\Concept Refinement\Support\Current\Exhibit IV-25.dwg, Layout: South Cargo, Mar 07, 2003, 3:08pm

O'Hare Modernization Program  
Concept Development/Refinement

February 2003  
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